President Maclaurin sitting at the desk presented by the Technology Club of New York

technology
review
Published by MIT

The Technology Review

Vol. XVII JANUARY, 1915 No. 1

WILLIAM BARTON ROGERS THE FOUNDER

Address delivered at a convocation of the students on the 110th Anniversary of his birth, December 7th, by James P. Munroe, '82

As you doubtless know, John Harvard left only £750 to the college in Cambridge, and the total gifts of Elihu Yale to the college in Connecticut amounted to only the petty sum, from our modern point of view, of about £600. Nevertheless, those two names will go down conspicuous through all human time. Yet neither of the men thus honored took any active or effective part in the founding of either Harvard University or Yale.

Our Founder, on the contrary, gave money, gave years of thought, time and energy, gave finally his very life, to the establishing and developing of this institution. Yet, with the exception of the name of this building and of certain professorships and scholarships, there is no memorial to that noble and distinguished and real founder of the Institute of Technology, William Barton Rogers.

It is not only fitting, therefore, it is tremendously important that on this 110th, and on every anniversary of President Rogers' birth, we who are his spiritual heirs, should get together and—not for his sake, but for our own—recall the man who not only created the Institute, who not only did more than almost any other individual to make modern higher education possible, but who bequeathed to us that most precious of legacies,—the legacy of the spirit of Technology.

The father of William Barton Rogers was an Irishman from Londonderry, his mother was a Scotchwoman from the same city, and they came to America after the Rebellion of 1798. They had four sons, of whom William was the second, and every one of those

sons made notable contributions to science, both pure and applied. Seldom have there been four brothers all so gifted, and they were among the last of those intellectual giants who were willing and were able to "take all Nature for their province." Since them, every man of science has been, perforce, a specialist; and it is really a phenomenon to find, in these days, a scholar so deeply learned in physics, in the law, in education and in many other branches, as is that distinguished and worthy successor to Professor Rogers, President Maclaurin.

Bred in the venerable Southern college of William and Mary, for many years a teacher there and at the University of Virginia, where he was also for some time the administrative head, state geologist of Virginia, and an international authority on geology, chemistry and physics, William Rogers, as far back as 1846, drew up, with his brother Henry, a plan for a new type of college in which young men should be rationally and thoroughly trained both in pure science and in its applications to the rapidly growing problems of engineering, chemistry, architecture and public health. In those days, when the only kind of higher education conceivable was the traditional one brought over from Oxford and Cambridge, this plan seemed the wildest sort of dream. Men of the type of the Rogers, however, do not idly speculate: they persistently seek every means of making their visions true. And, fortunately for us, circumstances combined to help William Rogers establish here in Boston, in 1865, the very type of school of which he had clearly seen the outlines nearly twenty years before.

The favoring circumstances were these: First, that he married a Boston woman of wealth and in heartiest sympathy with his ideals, Miss Emma Savage, daughter of the famous genealogist, James Savage; and, secondly, that for a number of years a group of enlightened manufacturers of Massachusetts had been striving to create some kind of technical institution in which might be trained the engineers, chemists, and others skilled in applied science whom they needed in their rapidly expanding industries. These men, wise in their own businesses, but inexperienced in matters of education, had been tentatively proposing projects, more or less fantastic, for what they called a "Conservatory of Arts and Sciences." They needed a far-seeing, experienced leader; and such a leader conspicuously appeared in the person of Professor Rogers, who had come to Boston in 1853, who possessed the wisdom needed

to prepare a clear scheme for what he called an Institute of Technology, who had the eloquence to plead its cause with the Massachusetts legislature and with men of wealth, and who had the indefatigable energy to work out all the myriad details and to overcome the million obstacles inseparable from such a task.

For nearly three years Mr. Rogers labored with committees of the legislature, with other public officials, and with many private citizens, until, in April, 1861, he secured a charter for an Institute of Technology, together with a grant of two thirds of one of the squares of the projected Back Bay lands (at that time twenty feet below high water). But the charter could not become effective until $100,000 should be raised; and that was a huge sum in those primitive days. Moreover, the opening Civil War turned men's minds and purses wholly away from educational projects. Therefore, notwithstanding stupendous effort on the part of Professor Rogers, it was only a few days before the expiration of the two years within which the money must be raised, that the enterprise was saved by a gift of $100,000 from Dr. William Walker. Nearly another two years of the hardest kind of work was required to organize the school, to find a temporary abiding place for it, and to draw up plans for a suitable permanent establishment. The School of Industrial Science was opened in 1865,—fifty years ago next February—in the Mercantile Library Building on Summer street (a few years later swept away in the great Boston fire), and it was not till the fall of 1866 that this Rogers Building was fully occupied by classes.

And they were such tiny classes! When the school opened it had only fifteen students, and when I entered, thirteen years later, there were less than 200, scarcely a tenth of the present registration. And what a huge task it was to create the Institute out of nothing during a period demoralized first by Civil War, and then by the panic of 1873, against every sort of opposition and intrigue, and in the face of friendly doubts that there ever could be demand enough for young men trained in this manner to make such an institution necessary!

Moreover, President Rogers and his colleagues had set themselves the task of hewing out new paths in education; and that, especially in conservative New England, is the most difficult of enterprises. Laboratory teaching was then practically unknown. The few who studied chemistry had never got beyond watching the

instructor perform crude experiments at arm's length from his pupils. In two or three strenuous years, however, Rogers and his associates not only created working, teaching laboratories of chemistry, physics, mining and metallurgy,—they evolved a whole new system of education; and they did this work so well that, today, not only the Institute, but practically every higher and every secondary institution in the civilized world is instructing its students in the better ways that Rogers demonstrated. As I have said elsewhere:

"The change has come about so gradually as to make it hard to realize that, whether in the primary school or in the university, the attitude of the teacher towards his pupil, of the pupil towards his work, of the public towards the means and ends of education, is enormously different from that of forty years ago. Then education was receptive, today it is creative; then the pupil was to be instructed, today he is to be developed; then the important element was the lesson learned, today it is the student learning."

But the path of the pioneer is always thick with thorns. What was it, therefore, that kept the Institute alive through those days of doubt and difficulty, through those almost continuous dark years from 1865 to 1881? It was kept alive by a board of trustees who, when there were no funds to pay the bills, put their hands in their own pockets; it was kept alive by a Faculty that, when there seemed nothing to be done except to close the Institute, voluntarily cut down their already far too meager salaries; above all, it was kept alive by Professor Rogers who, though at an age (seventy-four) when most men feel that they have earned the right to rest, though so long an invalid that only the most extraordinary care on the part of his devoted wife had saved him from death, reassumed, in 1878, the active burden of the presidency, which ill-health had compelled him to lay down eight years before, and, like an aged general rallying at the front, so inspired his forces that, three years later, he was able to deliver the Institute, comparatively strong and with its future well assured, into the young, vigorous hands of that magnificent successor in the presidency, General Francis Walker.

Let me tell you what some of those men of the early days did;—and these instances are merely typical. William Endicott, who died the other day, full of years and of honors, personally raised for Technology, as its early treasurer, by what may well be called door

to door begging, more than $600,000; and, when the banks refused to accept the notes of the Institute, endorsed them himself. Robert H. Richards, who has just retired from the teaching staff after nearly fifty years of devoted service, used, like many another member of that early Faculty, to work night and day, doing the labor of three ordinary men, in order to make the scanty resources of the Institute go to their very farthest limit. And President Rogers himself not only never took a cent of salary, not only expended, on the contrary, large sums on behalf of the Institute, but, for years, literally from a sick-bed from which it seemed as if he never could arise, he thought and talked and wrote Technology, doggedly maintaining, through all kinds of discouragement and temptation, its independence and its high ideals.

Moreover, old and ill as he was, he seized every opportunity to place his wisdom and his learning at the service of the community, always declaring it to be the paramount duty of educated men to use their special powers in helping in all ways possible their fellowmen.

How I wish you might have seen him; for he was a type of old-world gentleman wholly unknown to these modern, hurrying times. Soldierly in bearing, with a face of Roman purity and strength, his beautiful white hair worn long, he had a courtliness of manner that is now a lost art, he had a voice that, even in old age, was like a bell, and he possessed an extraordinary eloquence that made his presentation of the most abstruse scientific topic as compelling as an oration by Webster, Everett, or Clay. His eyes, deep set under shaggy white brows, were piercingly brilliant; and when he appeared, every gathering rose, instinctively, to do homage to such a splendid embodiment of noble intellect. I saw him only a few times, for he could mingle little with the student body; but I had the solemn privilege of witnessing the very act of laying down his life for the Institute he loved. Here on this platform it took place, on the day of my graduation, May 30, 1882. His successor, President Walker, introduced him to the large audience, in sentences so eloquent that it made one's heart ache to hear such eulogy. President Rogers rose to reply, said a few words, and, swaying for a moment, fell, instantly dead, still in the harness of his epoch-making task. A few days later he was buried, with simple services, from this same hall; and thirty-two years later, the atmosphere of the Institute which he foresaw in 1846, which, with so much toil

and anxiety he built up between 1858 and 1882, and for which, literally, he gave his life, is still electric with the Technology spirit that was his finest legacy: the spirit of hard work; the spirit of absolute honesty in research and in the applications of research; the spirit of devotion to the kind of education for which the Institute stands; the spirit of self-dedication to the public weal; the spirit of democracy, which makes Tech men real brothers here and throughout the world; and the spirit of self-forgetfulness which places the work to be performed far above the petty, personal advancement of the individual by whom that work is done.

I hope all of you will go out from the Institute good engineers, competent chemists, or skilful architects; but you will fail to be genuine Tech men, true sons of Rogers, if you do not also go out greedy for a man's work, determined to be absolutely honest and clean in everything you do, wholly willing to subordinate your little interests to the larger interests of the "team" with which you are called upon to "play the game," and always ready to serve your community, be it large or be it small, by answering every reasonable call of citizenship.

Industry, honesty, loyalty, service,—those were the qualities conspicuous in the life of William Barton Rogers, those are the qualities fundamental to Technology. This spirit of hard and purposeful industry, of absolute honesty, of personal and social loyalty, of service to one's fellow-men, is the undying legacy of President Rogers, cherished and augmented by his associates and successors, and transmitted to every Technology man who is ready to receive it, as a free and imperishable gift from this splendid institution, the beloved foster-mother of us all.

Proceedings of the National Academy

Beginning this month the National Academy of Sciences will start the publication of its monthly proceedings. The managing editors will be Professor E. B. Wilson of the Institute, and the chairman of the board, Professor A. A. Noyes, '86, also of the Institute. Professor Noyes is also a member of the editorial staff covering the field of physical and organic chemistry. The foreign secretary is George E. Hale, '90, of the Solar Observatory, Pasadena, California.

ON TO PITTSBURGH

The latch string is hanging out and every Pittsburgh Tech man is a host—General plans for meeting of Technology Clubs Associated

The whole-souled and thorough way in which the alumni of Pittsburgh are preparing to entertain the Technology Clubs Associated, Friday and Saturday, February 19 and 20, indicates that the third annual meeting of the associated clubs will be at least on a par with the very successful occasions that have preceded it.

When the plans for the All-Technology reunion in Boston were changed, postponing the event until another year, the opportunity was given to Pittsburgh, which had expected to entertain the associated clubs in 1916, to do so this year, and although the notice was short the Pittsburgh association accepted the opportunity with enthusiasm, and preparations are now practically complete for the entertainment of their guests.

In accepting this offer the Pittsburgh club realized that the conditions at this time militated against a large attendance if the plans of previous years were pursued. They felt that the convention would have to be made attractive to a large number of the alumni, and the most sensible procedure would be to make the entertainment of a simple order so that the expenses would be reduced to lowest terms. Although it is contemplated to make the cost of the different events very moderate indeed, this is not at all indicative of the hospitality that will be provided. It has been decided to make the banquet charge three dollars per plate and the course and class luncheons one dollar a plate. The smoker, which will take place on the 19th, will be free of charge.

Another characteristic of the meeting will be that it will be made of concrete value to the Institute in addition to the general benefits to be derived from such a social gathering of alumni. One way of doing this is to make the course luncheons, which will be held on Saturday noon, February 20, particularly interesting and useful. The committee in charge of this event plans to divide the attendance into six or seven groups, each containing men from one or two allied courses and to have Faculty representatives of each

department present, at each of these groups. In addition to this it is planned to do some preliminary work so that there will be in each group a local speaker who will express the alumni opinion as to the educational results accomplished by the course. The Pittsburgh club feels that the purpose of the Technology Clubs Associated should be largely to form a channel for the expression of alumni thought on Institute matters, and it is proposed to make this expression as wide and as helpful as possible at this time.

Another feature of the convention will be the great variety of entertainments that will be offered in order that each individual may receive the greatest benefit. Some of the visitors will find their most profitable recreation in following professional lines; others will find it most desirable to break completely away from their own field of work and make studies in other fields. The excursion committee has, therefore, decided to offer those attending the meeting their choice of a wide number of points of interest, and as Pittsburgh is a center of a great diversity of industries and also has many examples of scientific and artistic interest, it is believed that everybody may be sure of a profitable visit.

Another feature of the convocation, which will be generally endorsed, will be the effort of the committee to encourage the men coming to the meeting to bring their wives. Places will be provided for them at the banquet and on the excursions, and arrangements will be made so that they will be taken care of at practically no expense during the evening that the men will be at the smoker. It is intended that the ladies shall feel perfectly at home at the various functions. There will be no special tables for them but they will sit with their husbands as members of the convention. The committee realizes that this is a very decided innovation, but believe that it will work out in a most satisfactory manner. The wives of Pittsburgh men will be out in force.

It will be interesting to know that the arrangements are not being made by a committee of limited size, but as the club expresses it, they have a "right little, tight little, association" out in Pittsburgh, and intend that every member of it shall be, in part, responsible for the success of this meeting. Accordingly every member of it is a member of at least one of the sub-committees.

The scheme of organization includes a general committee composed of the chairmen and vice-chairmen of the various sub-committees and several members at large. Each sub-committee

is a complete unit having a secretary to keep records of its proceedings in order that they may be available for the meeting of the clubs next year. The plan of having every member of the club on one of the sub-committees is proving very effective, not only in taking care of the details of the coming meeting but also in interesting all the men in the success of the enterprise and in the Pittsburgh club.

The program for the meeting is as follows:

Friday morning, February 19, registration; Friday noon, luncheon by classes; Friday afternoon, excursions to optional points, probably in small groups; Friday evening, smoker at the University Club. Saturday morning, excursions; Saturday noon, course luncheons; Saturday afternoon, excursions; Saturday evening, banquet.

On Friday afternoon tea will be served informally at the Twentieth Century Club for the visiting ladies, and on Friday evening a theater party will probably be arranged.

Speakers for the banquet have not, as yet, been wholly decided upon. The business meeting of the associated clubs will be held during the course of the banquet.

Following is a list of committee chairmen, vice-chairmen and secretaries:

COMMITTEE CHAIRMEN, VICE-CHAIRMEN AND SECRETARIES

Registration: J. O. Handy, '88, 5723 Woodmont St.; W. F. Davidson, '01, 624 Farmers Bank Bldg.; M. A. Grossman, '11, Pgh. Testing Laboratories.

Finance: Geo. Faunce, '82, 1010 Benedum Trees Bldg.; H. D. Shute, '92, Care W. E. & M. Co., East Pittsburgh.

Accommodations and Transportation: T. H. Bakewell, '76, 5529 Fifth Ave.; W. B. Blake, '87, 1101 Penna. Station; Z. M. Briggs, '99, 1101 Penna. Station.

Hospitality: S. B. Ely, '92, 5122 Pembroke Place; W. E. Reed, '97, 1662 Frick Annex; Bradley Dewey, '09, East Liberty Y. M. C. A.

Class Luncheons: E. D. Barry, '95, care Universal Portland Cement Co., Frick Bldg.

Course Luncheons: E. B. Raymond, '90, care Pittsburgh Plate

Glass Co., Frick Bldg.; A. G. Pierce, '92, 2211 Farmers Bank Bldg.

Smoker and Entertainment: W. I. Bickford, '01, 711 Grant Street; C. H. Young, '96, care Armstrong Cork Co.

Excursions: F. H. Crabtree, '89, Carnegie Inst. of Tech.; A. B. Bellows, '89, Pgh. Testing Laboratories; A. L. Davis, '98, 304 Chestnut Road, Edgeworth.

Banquet: L. K. Yoder, '95, 5810 Murrayhill Place; H. M. Philips, '92, 5703 Northumberland St.

Speakers: C. S. Robinson, '84, Old Furnace Road, Youngstown, O.; W. C. Fownes, Jr., '89, 5654 Callowhill St.

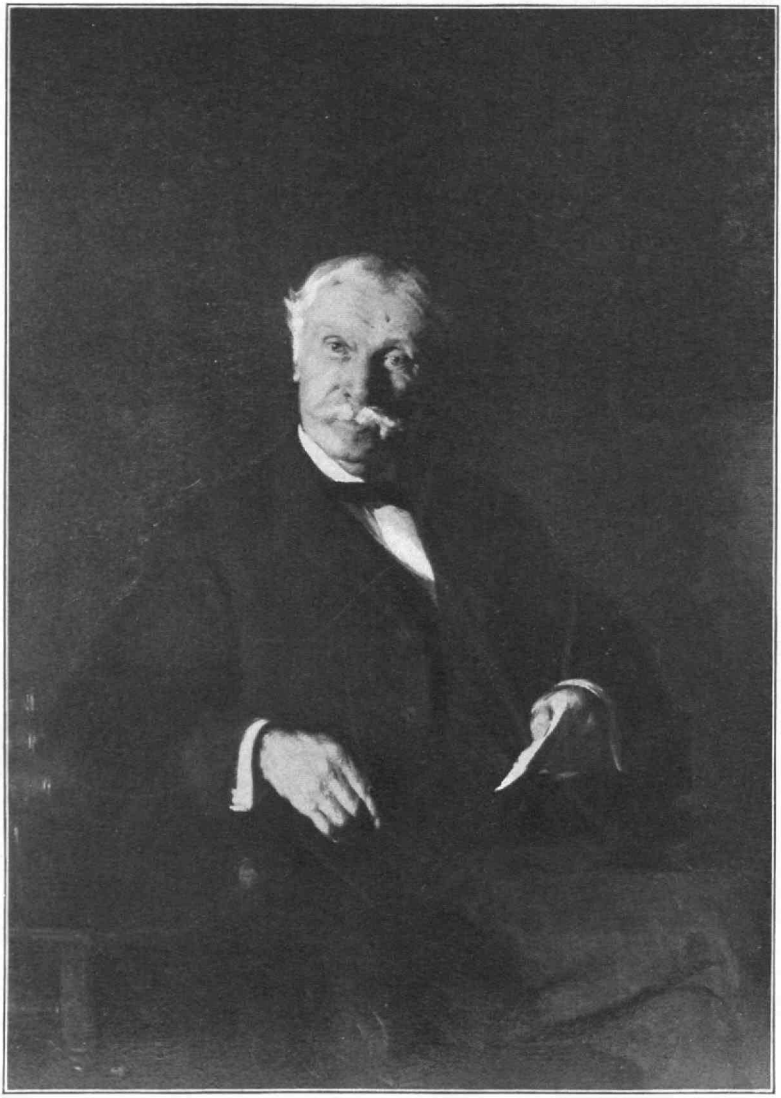
Publicity: F. L. Bishop, '98, University of Pittsburgh; F. A. McDonald, '90, 1215 Carnegie Bldg.; M. R. Scharff, '09, 2548 Oliver Bldg.

The chairmen and vice-chairmen, with the following members at large, constitute the general committee having the reunion in charge:

Morris Knowles, 2548 Oliver Bldg., president T. C. A.; W. E. Mott, '89, Carnegie Inst. of Tech., general chairman; A. B. Harlow, '78, Farmers Bank Bldg.; W. H. Rea, '79, Farmers Bank Bldg.; D. S. Bissell, '81, Woodland Road; U. C. Cushing, '87, 1117 Penna. Station; H. A. Rapelye, '08, Oliver Bldg., associate secretary T. C. A.

It is likely that each of the neighboring local alumni associations will appoint one man to make arrangements for transportation so that as far as possible Tech men may go to Pittsburgh from each of the cities, in a body.

It has not been fully decided whether the Boston contingent will go to New York and proceed to Pittsburgh with the New York delegation or whether it will go to Buffalo, taking in the delegates from along the route. Full arrangements will be given in the February Review.



PORTRAIT OF PROFESSOR RICHARDS

Presented to the Institute by former students of the Department of Mining Engineers

IN HONOR OF PROFESSOR RICHARDS

Dinner at Copley-Plaza a brilliant affair—Eulogies by colleagues and pupils—Portrait of Professor Richards presented to the Institute

The banquet, given in the honor of Professor Robert H. Richards, '68, at the Copley Plaza, December 7, celebrating the completion of his fifty years' service as a teacher at the Institute, called out a brilliant gathering of old time friends and former students.

The speakers were President Richard C. Maclaurin, who also acted as toastmaster, Professor Charles R. Cross, '70, Jasper Whiting, '89, president of the Alumni Association, Timothy W. Sprague, '87, who presented the portrait of Professor Richards to the Institute, Eben Stevens, '68, a member of the Corporation and a classmate of Professor Richards, and Professor Richards himself.

The feature of the evening was the presentation to the Institute of a painting of Professor Richards, a gift of his former students, the work being executed by Margaret F. Richardson of Boston.

The committee in charge of the dinner consisted of Professor H. W. Tyler, '84, chairman; Timothy W. Sprague, '87, and Eben Stevens, '68.

"We are here tonight to honor a man known and beloved by Tech men everywhere," said President R. C. Maclaurin in beginning a concise review of the work of Professor Richards at the Institute. "No one living has been longer associated with Technology, for he was in at the very beginning and he has retained the most intimate relationship up to the present.

"The Institute opened with temporary quarters in Summer street in February 1865 and the catalogue of 1865–66, the first that was published, contains the name of Robert Hallowell Richards as a second-year student. He was thus one of that group of whom President Eliot, who was also in at the beginning, but as a professor, not as a student, spoke at the banquet commemorating the fiftieth anniversary of the granting of the Institute's charter and described as a 'picked up lot.' Mr. Eliot would agree that if their quality could be gauged by the specimens that have survived

they were eminently worth picking up. Immediately on graduating with the first class in '68, he joined the staff of the Institute as an assistant and only three years later was placed in charge of the mining laboratories. Then began that long period of service as a teacher and an investigator that won renown for Professor Richards and did so much to establish the reputation of the Institute in one of the great fields of its activity. In the specialty that he made peculiarly his own—that of ore dressing—almost all that he did was pioneer work in education. There were no suitable text-books in those days, he had to turn himself later to writing such books and pronounced the standard texts. There were no established methods of instruction, there were no laboratories. Reporting to the President of the Institute in 1873 on the work of his department, he said: 'Our work during the past year has been mainly tentative. We have tried to discover the best way of giving instruction.' You will observe the characteristic combination of modesty and good sense. He does not take up the position that he knows it all. He, too, is a learner, and he proposes to learn by the experimental method. Various expedients will be tried and tested by experience until the best is reached. However, even in these early and formative days, he is clear as to the great ends to be aimed at and the broad means to be employed to reach those ends. Thus, in the same report, he says: 'When preparing a young man for the possibility of filling responsible positions in after life, there seem to be three very important qualities to be developed in him—he needs scientific attainments, capacity for organizing and directing work, and character or tone. Mere scientific attainments are to be derived more especially from books and lectures, while quick, ready judgment, inventive skill, self-reliance and directive power can be brought out by practical work such as the laboratories furnish. The character or tone developed in the student depends in no small degree on the influences around him. When the instructor joins heartily with the students in their hard work and contributes to its full success, the experience of the past warrants us in believing that an earnest, determined enthusiasm will be the prevailing spirit amongst them. Energetic, persevering effort is best induced by the living example of those who show the power of overcoming difficulties.' In all these important matters Richards consistently practised what he preached, and it has been mainly due to the power of his example and of his personal

influence on his students that so many of them have brought credit to him and to the Institute by making good in the world.

"Other speakers will deal, I hope, with various phases of his activity, but I cannot deny myself the pleasure of saying something with regard to certain tenets in his educational creed to which I have not yet referred. He always has had the clearest understanding of the importance of first-hand knowledge and has insisted that students should be taken as much as possible to the field. Even in the very earliest days of the Institute, we read of trips to Nevada, Utah, California, Virginia, Nova Scotia and other parts of Canada. In each locality visited, the geology of minerals, the mode of their disposition and extraction was carefully studied and much time spent in the mines. It was in 1871, the year in which he took charge of the laboratories, that another article in his creed was firmly established as the result of observations in the field. Describing the excursion of mining students in that year, President Runkle says in his report: 'It was during this excursion whilst observing the wrecks of fortune strewn all over the territories that the thought occurred that much of this waste was due to a want of the combination of practical skill with scientific knowledge, and that the opportunity for experiment upon comparatively large quantities of ores must be offered to our students during their course as a part of their laboratory work.' 'Ore,' said Professor Richards at that time, 'may be subjected to the same kind of treatment and by the same kind of machinery in our laboratories as is used in the best mines; we must have real machines, not toys; they must be big enough to work under practical conditions, not too big to make their constant use by a small number of students practical and without undue expense they should be specially designed for the purpose of teaching fundamental principles.' Another article of his creed that has had much weight in shaping the work done at the Institute is his belief in the possibility of a short course. A surprising amount of instruction can be given in a limited period by an accomplished teacher, who gives much thought to the problem of concentration, sticks to fundamental principles and plans his work with a single eye to getting those principles thoroughly grounded in the mind of the student.

"While taking his full share of the work of teaching, Professor Richards always found time for research. His investigations have given him a world-wide reputation and attracted to the Institute

students from the uttermost parts of the earth. In the Department of Mining, we have had men from Canada and Mexico, and from South America, China, Russia, England, France, South Africa and Australia. He seems to have had the happy knack of avoiding all the pitfalls that to the vision of some surround a teacher today. There is much talk of the burden of teaching and its almost necessary adjuncts of committee work and the like. It is said that these things leave no time for research. No doubt, in many cases, the burden is heavy, but men of power everywhere have found time for teaching and investigations alike, as has Professor Richards. Then there is talk of the disillusions of the teacher, the poor returns that he gets and the consequent difficulty of retaining men of the first quality in the ranks of the profession. We need not be unduly pessimistic with men like Professor Richards around us. He has seen and appreciated the permanent satisfaction that comes from the life of a teacher—the pleasure in unselfish public service, the consciousness of being useful whether men appreciate one's usefulness at its true value or not, the respect and affection of generations of pupils that teachers like Richards gain. Older men in most of our institutions of learning are to be found who think that their institutions are going to the devil. Richards has kept too active and too young to fall in this way. His belief in Technology is as fresh and strong as ever. His name and influence will not soon be forgotten within the Institute, but I hope that nothing will be left undone that would tend to give permanence to that influence. When we have funds to build new mining laboratories, his name will, I hope, be permanently associated therewith. The spirit of devotion that characterizes Richards as it has characterized so many of his colleagues, is what has made Technology. Under all changes and for all time may that spirit remain!"

As the first speaker of the evening President Maclaurin introduced Professor Cross, head of the department of physics, who spoke feelingly of his connection with Professor Richards during the most of his long period of service, Professor Cross having come to the Institute two years after Professor Richards. He spoke of the earlier days of the Institute and of the fact that the day marked the anniversary of the birth of the first president, President Rogers, and said that there were certain characteristics of Professor Rogers that also marked his eminent pupil, Professor Richards. The

beginnings of the old Institute were the days of small things, said Professor Cross, but not the days of small men; many of the older members of the Faculty were in the front ranks of science. He mentioned the fact that Professor Richards was the first student of the Institute to be appointed to the Faculty, and spoke of the vicissitudes of Technology in the '70's. He closed his remarks with a very beautiful and feeling tribute to his colleague who has just been made professor emeritus.

In behalf of the alumni of Technology, Jasper Whiting, president of the M. I. T. Alumni Association, expressed the sentiments of a group that "looked upon Professor Richards as embodying within himself the best that is in Technology." His brief sketch of the Richards that lives in the memories of Institute alumni painted the eminent professor as "the man—the firm, just, painstaking, gentle and above all, kindly man that stands out clearest after the lapse of years." And from his remembrances of Institute days the speaker noted an instance, where a student was in an unhappy frame of mind lest his mid-year senior examinations might go wrong. Here Professor Richards took the trouble, some days in advance of the official notification, to telegraph him from the West that all was well, and thus to relieve the strain; and its interest lies in the fact that it was personal experience that Mr. Whiting was relating.

"Professor Richards," said Mr. Whiting in closing his short address, "ten thousand Technology men extend to you tonight, through me, their heartiest congratulations and best wishes. If they were here, ten thousand men would rise to their feet and ten thousand voices would raise a cheer for you such as Boston never heard before. We are proud of what you have done for the Institute and for us. We recognize what you have accomplished for science and for humanity, but most of all we see in you personified the Technology spirit, which in the final analysis implies service to our fellow men. As the Chinese say to those whom they most love, so in behalf of every member of our Alumni Association —with the love and gratitude of every member—I now say to you—May you live ten thousand years and may your light shine forever."

In presenting the portrait Mr. Sprague stated that some years ago he had received a letter from a former student of the department of mining engineering suggesting that a portrait of "Bobby"

Richards be painted, and be presented to the Institute. It was Arthur L. Hamilton, '00, who made this a possibility. The suggestion met with instant approval, and in the work of raising money, Professors Fay and Locke of the Faculty have rendered valued assistance. The plan was to have the fund made up of a large number of small contributions from former students of the mining course, and donations began to come in from all over the world, accompanied by letters teeming with affection and respect for their revered teacher.

"The sum realized" said Mr. Sprague, "made up of several hundred contributions, was ample for the purpose without calling for the second contribution, and was further sufficient to enable us to send a photograph of the painting to each donor, and there still remains a small surplus, which will be devoted to the starting of a Richards collection for the mining library.

"The picture was painted, and do not let it be understood that Professor Richards did not himself contribute. I am afraid if anyone should ask him about it, he would strongly urge 'Never again'; but as in the case of every other duty, the professor stood by us manfully and gave freely of his time and strength for the many sittings the finished product required.

"The raising of funds for painting a portrait of such a man is a privilege and pleasure, and the satisfaction expressed by a large proportion of the donors at the result, is a further pleasure; but if any of you are connected with a similar undertaking, don't, by any chance, after the portrait is finished, admit to the minority that you had anything to do with the selection of the artist or approval of the finished product. Put that on the shoulders of some Mr. Smith and locate him in Australia.

"I venture to state that no comparatively small undertaking will bring out more varied and opposing opinions from such a minority than the submission for approval or otherwise of a portrait of a well-known and well-loved man.

"Mr. President, I take great pleasure, on the part of these many contributors, in asking you to accept and honor for the Institute of Technology, this portrait of Professor Richards, and I hope that most of you will see on the canvas before you a life-like reproduction of the 'noblest Roman of them all.' "

President Maclaurin formally accepted the portrait on the behalf of the Institute and introduced as the last speaker of the evening Eben Stevens, '68.

Mr. Stevens said that as Lord Roberts was known by an affectionate abbreviation of his name, so "Bob" Richards is and has always been known for the same reason. Although retiring as professor emeritus amid the pleasantest relations, yet when the active service terminated and he felt that his work at the Institute was finished, there was a wrench on the part of his friends as well as himself at the actual realization of the change. Professor Richards' work for science and mankind was widespread. The speaker referred to the untiring efforts of the guest of the evening to upbuild, strengthen and cement together the alumni organization, which has now become the "wheel horse" of the Institute. As a classmate Mr. Stevens was familiar with many interesting incidents in the life of his friend, but rather than dwell on the past he indulged in some happy prophecies. He expected that Richards would do and accomplish still greater things in working along nature's great law of economics, especially in reclaiming valuable material from by-products which are today being wasted. He closed with the following quotation from Oliver Wendell Holmes:

" 'Tis yet high day, thy staff resume,
And fight fresh battles for the truth;
For what is age but youth's full bloom,
A riper, more transcendent youth!
A weight of gold
Is never old,
Streams broader grow as downward rolled.

At sixty-two life has begun;
At seventy-three begin once more;
Fly swifter as thou near'st the sun,
And brightest shine at eighty-four;
At ninety-five
Shouldst thou arrive,
Still wait on God, and work and thrive."

Professor Richards responded feelingly to the tributes of the various speakers and voiced the depth of his gratitude for the pleasure which had come to him on this occasion so fraught with happy memories and so filled with expressions of friendship and love.

Professor Richards, Mr. Sprague and the committee were fairly deluged with letters and telegrams filled with congratulations and good wishes from a host of colleagues and former pupils. Some of them were read at the banquet, but even a list of them would occupy too much space to be reproduced here.

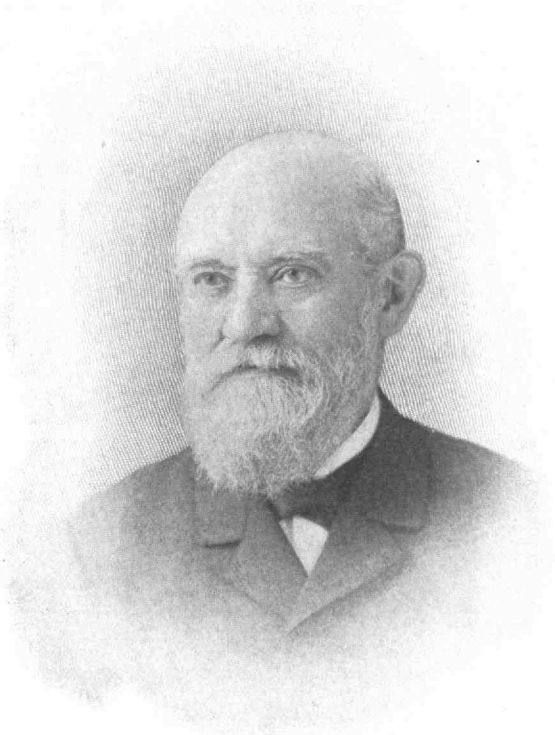
WILLIAM ENDICOTT

For half a century a member of the Corporation of the Massachusetts Institute of Technology

In the recent death of Mr. William Endicott not only does the Institute of Technology mourn its oldest trustee and one of its most faithful friends, but the city, the state, and the nation lose a man who embodied throughout his life the finest ideals of American citizenship.

Mr. Endicott was descended, through his father, from John Endicott, who came from England in 1627, founded Salem, and served as first governor of the Massachusetts Bay Colony. His mother was of the Rantoul family, for generations prominent in Beverly. Absolutely devoid of snobbishness, he appreciated, nevertheless, the obligations which worthy ancestry entails, and, in a wide range of activity, perpetuated and amplified the high ideals of those Puritans who, early in the seventeenth century, sought to establish in America a genuine and efficient commonwealth.

Born, January 4, 1826 in Beverly, where his father—also William Endicott—kept a general store, the boy, on finishing the public school course, entered the parental employ, being considered too delicate in health to undertake what were in those days the hardships of a college course. Of an unusually alert and eager disposition, he attracted the attention of the partners in Hovey, Williams Company, importers of dry goods in Boston, who urged his father to permit him to enter their service. This, after six years of apprenticeship in the Beverly store, he did. Within two or three years thereafter young Endicott had acquired an interest in the business of the Boston firm, and, on January 1, 1851, was admitted to full partnership, the name being changed to C. F. Hovey & Company. Meanwhile, from that of importing, the business of the firm had been extended into jobbing and retailing, their first shop being located on Winter street. In 1856 they removed to their present location on Summer street, having been, in both instances, the first business to enter what were then purely residence streets.



WILLIAM ENDICOTT

Treasurer of the Institute from 1866 to 1871

The invasion of dwelling-house territory was, however, only a minor innovation on the part of Messrs. Hovey & Company. They were the first dry goods house to introduce a strictly one-price system, all transactions over the counter, up to that time, having been a process of prolonged bargaining between buyer and seller. They were the first, moreover, not only to introduce early closing—all shops having been kept open, previously, until 10 p. m.—but also to put an end to the pernicious custom of "family bills," paid only once a year.

Almost from the beginning, Mr. Endicott's special field in the rapidly growing business of C. F. Hovey & Company was that of finance. When it is remembered that there devolved upon him the carrying of his firm through the frightful panic of 1857, the scarcely less serious one of 1873, and the Civil War itself, it is evident that only a man of exceptional ability and possessing the full confidence of capital could have weathered financial storms fatal to almost every other enterprise. So wide became his acquaintance with those who were building the foundations of modern American industry, so absolute was their belief in him, and so unusual was the combination in him of business shrewdness and unwavering honesty, that he was sought from every direction to occupy positions of trust. Practically every city and state office was, at one time or another, urged upon him. He never accepted public responsibility, however, except as one of the commissioners for the extension of the Massachusetts State House, a considerable undertaking which was carried out, needless to say, without scandal and within the appropriation.

Of positions of responsibility more or less thrust upon him by business demands, Mr. Endicott held very many, among them being a directorship for twenty-two years in the Chicago, Burlington and Quincy Railroad, the presidency of the Burlington and Missouri River Railroad in Nebraska, and a directorship for forty-one years and the presidency for twenty-seven years of the New England Trust Company. It was in unpaid positions of trust, outside of business, however, that Mr. Endicott made his greatest contributions to the common good. He assumed these many obligations in no spirit of position-seeking, but purely in the belief that when a man has abilities and opportunities which secure for him private and public confidence, he should devote his energies, as far as possible, to those special services which only such favored

individuals can give. He early interested himself, therefore, in the Museum of Fine Arts, and succeeded Mr. Martin Brimmer as its president; he was for thirty-nine years (during seventeen of which he was president) a trustee of the Suffolk Savings Bank; he was for many years (until a general statute forbade it) a trustee also of the Provident Institution for Savings; he was for twenty-two years a trustee of the Massachusetts General Hospital; for a quarter of a century he was treasurer of the permanent funds of the Boston Young Men's Christian Union; for forty years he was either a trustee or treasurer of the Perkins Institution and Massachusetts School for the Blind; he was one of the managers of the legacy left by Benjamin Franklin to the town of Boston (out of which was established the Franklin Union); and there were many lesser institutions to which in one way or another he contributed not merely money, but endless time and painstaking thought.

In the trying period of the Civil War, Mr. Endicott's special experience and unusual financial courage were of the utmost service to the country. An early follower of the Republican Party, he was an alternate delegate to its first National Convention, in 1856. Upon the breaking out of the war he joined that notable group, including such men as John A. Andrew and John M. Forbes, which did so much to strengthen the hands of the Washington government, not simply through organizing the forces for recruiting and for securing money and supplies, but also through combating the financial heresies which, serious as was the actual evil that they wrought, might, if unchecked, have done far greater harm. Particularly effective were certain vigorous letters which Mr. Endicott wrote during the summer of 1864, when greenbacks had fallen to their lowest ebb and irretrievable ruin threatened industry and credit. Those letters were widely circulated, and did much to restore national sanity. For these many services Mr. Endicott was made a member of the third (civilian) class of the Military Order of the Loyal Legion of the United States, and was the last Massachusetts survivor of the small group of men thus honored. He was intimate with President Lincoln, and in his interesting "Reminiscences of Seventy-five Years," he gives several characteristic pictures of that many-sided man.

The service of superlative moment to the Review, however, is that rendered for more than fifty years to the Massachusetts Institute of Technology. He was among those who early foresaw

the need of such an institution, and he was the last survivor of that group of devoted manufacturers and men of business who so stoutly stood behind William Barton Rogers in his long fight to establish and to maintain the Institute. Elected a member of the Corporation in the beginning, he served from 1866 to 1871 as its Treasurer: and in both capacities his work was zealous, wise and effective. There was no step in the slow development of the Institute which he did not eagerly and intelligently follow; and there is much reason to believe that, had it not been for his practical faith in the future of the school, it would have succumbed under successive financial shocks. During the years of struggle from 1861 to about 1885, Mr. Endicott not only gave freely of his own money, not only, as treasurer, endorsed large notes of the Institute which the banks otherwise refused to receive, but more than once he saved the Institute from actual bankruptcy by securing personally, from his business friends and associates the money needed to keep it alive. By undertaking this most disagreeable and thankless kind of work he raised, by his own exertions, at least $600,000—including the William Barton Rogers Memorial Fund of $250,000—for the Institute, and he influenced, through the advice asked of him by would-be benefactors in the making of their wills, other sums impossible to measure. In one such case, however, the testimony is clear; for the memorandum in which he advised Mr. Henry L. Pierce concerning the making of his will is still extant, and it specifically mentions the Massachusetts Institute of Technology as "good for any sum." Adding only one institution in which he had a personal interest, Mr. Pierce followed this memorandum literally, with the result that the Institute of Technology eventually realized nearly $900,000 from his generosity. Since Mr. Pierce had no particular associations with the Institute, it may be said without exaggeration that at least a million and a half of the funds that came to Technology in the years when such funds were absolutely essential to its existence were the result of the personal exertions of Mr. Endicott.

It would give a very false impression of his association with the Institute of Technology, however, were too much emphasis to be placed upon his extraordinary skill and capacity in the raising of money. His keen and practical mind, his wide knowledge of men

and affairs, together with his absolute belief in the importance of trained men in industry and commerce, made him an invaluable adviser to the successive presidents of the Institute; and there is no question that he had much to do with the shaping of the policies of the school through nearly half a century. No problem was too large to engage his earnest study; no detail was too small to enlist his careful attention; and in all his dealings with the Institute his quick sympathy with men as men led him to take a lively interest, on the one hand in the work of the teaching staff, and on the other in furthering, by money and by wise advice, the careers of young men ambitious to become efficient workers.

Therefore, of the many activities, outside his business, which engaged Mr. Endicott's attention throughout his long and fruitful life, none was closer to him than the Institute; and his delight in the successive triumphs of the school in solving the difficult problems put before it was almost boyish. As advancing years forced him to give up one position after another, he still held his membership in its Corporation, and attended such meetings as he could. His lasting interest is evidenced, moreover, by the fact that in his will he added to the great gifts which he had already, directly or indirectly, made, the further sum of $25,000.

The sweetness and charm of his personality was so all-compelling that he possessed unnumbered friends. Yet he was serious, if not indeed severe, in his judgment of things, and his keen wit, in a man of different make-up, might have produced many enemies. With only a common-school education (although Harvard and Williams honored themselves by giving him a Master of Arts degree), he had an extraordinary command of English, both in speaking and in writing, and his letters on questions of public importance, issued from time to time in the public prints, were of the highest value. So scrupulous was his sense of duty in matters of citizenship that only a few days before his death, at a time when every exertion was painful to him, he went to the polls.

Left by successive bereavements to the devoted society of an only son, Mr. Endicott quietly passed away on November 7, bequeathing a rich record of service to industry, to education, to politics, to philanthropy, and to civic duty. Two days later he was buried, with simple services, from King's Chapel, where he had been a member for more than fifty years. To produce such men as he is the high ideal towards which the colleges are always

striving; and it is a blessed thing for the Institute of Technology that it can hold before its students an example so fine, so simple and so in every way efficient as that given by the noble, life-long service to his fellow-men of William Endicott.

JAMES P. MUNROE, '82.

The Year's Gifts to Tech

The Institute has received in gifts and bequests the past year the sum of $400,000, besides two items wherein it is residuary legatee and the amounts have not been determined. Following is the list of gifts:

Bequest of Caroline L. W. French, outright	$100,000
residue	100,000
Bequest of Lucius Tuttle	50,000
Bequest of Nathaniel Thayer	50,000
Bequest of William Endicott, residue	25,000
Bequest of Matilda H. Crocker, outright	20,000
residue	20,000
Bequest of Mrs. W. A. Abbe	10,000
Gift for George Henry May Scholarship	10,000
Gifts for research in a number of amounts	10,000

The two residuary legacies are those of the wills of Morrill Wyman and Horace W. Wadleigh.

The Boston Safety Society

As a result of the "Safety First" campaign, the Boston Safety Society has been organized for the promotion of industrial safety among factory workers throughout the Commonwealth of Massachusetts. President Maclaurin of the Institute is at the head of the new society, and Governor Walsh and the heads of public service corporations and of large manufacturing interests are among its vice-presidents. The first meeting of the society was held at Faneuil Hall, December 15, and was addressed by President Maclaurin and others. The society will cover, through the coöperative efforts of employers and employees, the important field of accident prevention in manufacturing plants and industrial corporations which cannot be reached by public campaign.

TECHNOLOGY CLUB OF NEW YORK CITY

Comparison with other College Clubs in the metropolis gives it a most creditable standing

There are about one hundred clubs that maintain houses of their own in the city of New York. Each represents a distinct idea, few being devoted to social enjoyment alone. The University Club, with a membership of thirty-five hundred and a waiting list seven years long, naturally draws the older college men who have become established in business or the professions.

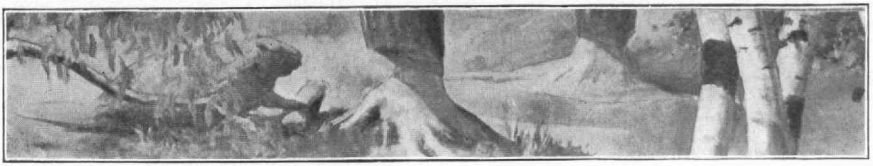
The growth of college clubs in New York has been phenomenal. The following figures show the present condition of the leading clubs:

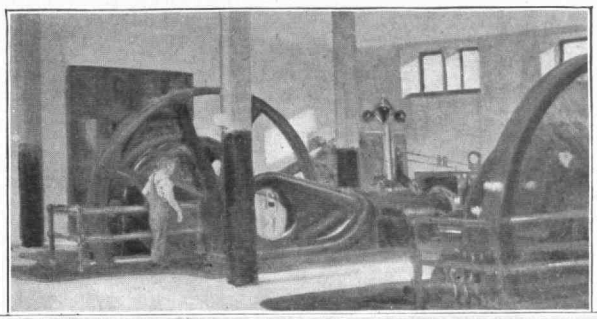
	Organized	*Membership*
Harvard	1887	3,816
Yale	1897	3,271
Princeton	1889	1,541
Columbia	1901	1,315
Technology	1903	1,000
Williams	1913	975
Cornell	1875	885
Pennsylvania	1899	600
Brown	1901	230
Dartmouth	1902	200

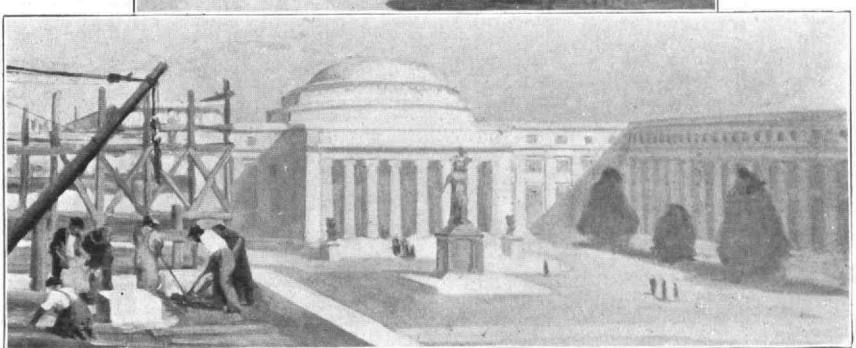
These figures show more eloquently than any words what progress the Technology Club of New York has made and its position among the college clubs of Manhattan. It is interesting to note that the Harvard Club has 2,030 non-resident members, Yale 1,527, and Princeton 733, which makes clear the fact that New York is regarded by all alumni as a strategic point for activity on behalf of their alma mater.

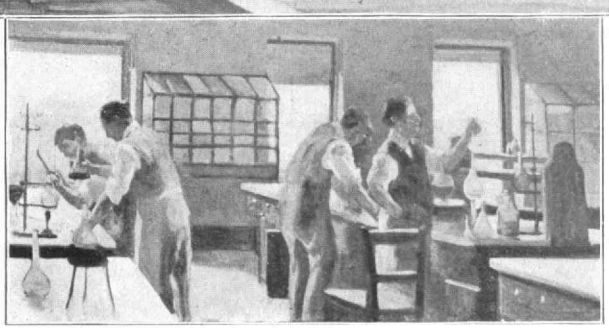
Not only in size do the college clubs of New York represent success, but their great growth in the last ten years gives them assurance that in the future they will quite likely take rank with the largest and most substantial club organizations in the city.

The new Yale Club will probably have the largest club building in New York. Already Harvard has a club house that is one of









DECORATIONS OF THE STEIN ROOM, TECHNOLOGY CLUB OF NEW YORK

the best equipped in the city. Princeton, Cornell, Columbia, Technology, and Williams have remodeled private homes, while Dartmouth, Brown, and Pennsylvania maintain rooms.

The college club idea, which has made such rapid progress in the last few years, is one of the finest developments of that spirit, unique in the United States, which holds alumni together and keeps alive the loyalty that means so much to the effective development of our American educational institutions.

What are the underlying factors of this idea, which the Technology Club of New York has grasped so quickly and made so secure? Primarily, of course, the great common interest is centered in loyalty to M. I. T.; but there are very definite reasons which grow out of this. In keeping alive friendships made at the Institute the club has been most successful. Class affairs have been held regularly, and these have been the means of bringing together men who otherwise would not have seen each other for years. Then the matter of making new friends in New York is most important to any man, and particularly is this true of Tech men whose work naturally falls along parallel lines. To have provided a place that all Tech men throughout the country could feel was their home while visiting New York has been another of the important elements in the upbuilding of the club.

The entertainment features of the club have been no small factor in its success. By holding attractive annual dinners at some well-known hotel, at which prominent speakers were guests, Technology has received publicity through the press which brings it to the attention of parents of possible students and men of means who will have to be looked to for the future expansion of the New Technology. The monthly entertainments have ranged from boxing bouts to technical lectures. Recently seventeen "War Talks" were held at which some of the most interesting speakers in New York gave their views of the war. Nearly two thousand members and guests came to these luncheons. On all holidays the club maintains open house and gives members, particularly the younger men, a friendly place to spend the day.

The growing interest of recent graduates in the club emphasizes a feature which has always been given prominence. The young Tech man who comes to New York a stranger can have all the advantages of a club at nominal dues and make friends who will be of assistance to him.

The present club house was opened on May 7, 1909. This house, since then the headquarters of Tech men in New York, has witnessed an ever-increasing interest among the members of the club. It enjoys an attractive location, overlooking Gramercy Park, surrounded by high-class clubs and conveniently reached by the subway. The first and second floors have been used for club purposes, with parlors, dining rooms, library, card and billiard rooms, and two upper floors provide sleeping rooms for members.

Pictures, books and magazines have been donated each year; thus bringing new attractions and associations. The growing collection of Technology portraits and groups recalls to members the memories of their Institute days.

The year 1914 will always be remembered as the turning point in the history of the club. Twenty thousand dollars was raised from members, and the whole club house remodeled, refurnished and newly equipped with all those things that a club requires. While the house is not large, it has a comfortable appearance and central location that is helping it to maintain its position and to grow every year.

A feature that has received much praise is the Stein room. The room is paneled in seasoned oak, and on each panel is a hook in the form of a T which holds a pewter mug and a pipe. These are sold to members, and give to the non-resident members an opportunity to own "a square foot in little old New York."

The fine new mural paintings for the Stein room are now in place and are attracting favorable comment from all visitors to the club. The work as done by Frederick T. Weber, who had to leave Paris on two hours' notice in September, is a permanent addition to the house that will always give pleasure to the members. The beaver frieze is the result of a careful study of beavers by Mr. Weber, and shows the industrious mascot of M.I.T. at work in his natural habitat. The three panels representing chemistry, architecture, and engineering give the room the technical atmosphere that is properly pleasing to all Tech men. Two more panels are expected to be in place by January 1, one embellishing the "Stein Song" and the other containing one of the cleverest ideas of mural painting in America. The latter is being done by I. W. Hazelton, '97. A new lighting scheme is being installed. When completed, the Stein room will be one of the most novel rooms in New York.

In December the club closed the year with an adequate house and a satisfactory financial condition that must be pleasing to all alumni. The fact that M.I.T. has been able to accomplish the club idea in New York, which is filled with attractive clubs of every sort, shows that the underlying spirit of the Technology Club has vitality and will grow as time adds to its resources. When the progress of the last ten years is considered, and the natural growth in the number of new members who are to be available in the future is taken into account, a glance ahead ten years reveals an inspiring picture. If every member of the alumni will realize the immense service the club is rendering the Institute by maintaining a center in New York for Technology affairs, the club will take on added spirit and grow in the future even more rapidly than it has in the past.

LESTER D. GARDNER, '98.

Pratt Will Case Decided

On December 31, the full bench of the Supreme Court decided against the contestants who have been attempting to break the Pratt will, which left the Institute $750,000 to found the Pratt School of Naval Architecture and Marine Engineering. Mention of the appeal from the decision of the full bench in September, was made in the November number of the TECHNOLOGY REVIEW. This decision was that the Institute should receive the bequest provided that the second and unattested signature of the will be stricken out on an amendment of the petition for the allowance of the document. The motion to amend was made by the Institute in October, and Judge Hammond of the Supreme Court allowed the motion. Sherman L. Whipple, representing the contestants, took exception to the ruling, and asked the full bench to decide on the question as to whether the motion should not have been filed in the Probate Court instead of the Supreme Court. In the decision last handed down the full bench said that, had the probate decree been affirmed and the case remanded to that court, the amendment to strike out would have to be in the Probate Court; but the appeal from the probate decree, allowing the will, was still pending in the Suffolk Supreme Court, which has jurisdiction to correct an error in pleadings by allowing the petitioners to amend.

WHAT THE CATALOGUE SHOWS

Interesting analysis of the student body and statements in regard to courses recently established

Petrograd now appears for the first time in the catalogue of the Massachusetts Institute of Technology, being the home place of a graduate student with the degree, M.E., from the Tomsk Institute of Technology who is doing advanced work in the department of mining engineering.

The entire registration at Tech is this year 1,816 students against 1,685 a year ago and 1,611 in December, 1912. The classification is the following:

Resident fellows	4
Non-resident fellows	1
Candidates for doctor of engineering	2
Candidates for doctor of philosophy	6
Candidates for master of science	34
Graduate students	290
Fourth year students	315
Third year students	262
Second year students	268
First year students	362
Special students	108
Unclassified students	458

In this list the graduate students and the resident fellows appear twice, so that from the total there should be subtracted 294 to make the sum correct.

An analysis of the figures in comparison with those of last year shows increases everywhere save in the unclassified list which represents students not up to the class grade in every particular.

The increases in number of the classes are from 12 to 50 students over those of last year. This means not only that a very unusual proportion of the students of 1913–14 have returned—from 80 per cent. to 86 per cent.—but that the number who from one cause or another have not been able to return has more than been made up by students—many of them from other colleges—who

have come directly to the more advanced grades. The number of college graduates is 45 larger than last year, while the special student list is 45 more than last year. These latter items testify to the reputation of Tech among those who are seeking an engineering education.

In the department of military science the change in personnel is the appointment of Leicester F. Hamilton, S.B., '14, colonel of the regiment of last year, as assistant. The departments affected by the coöperation agreement with Harvard University present already on their rolls of instructors the names of the Harvard men, although the work was not to be begun together till the move of Tech to the river-side was made. Thus it is that the Technology civil engineering professors include George F. Swain, formerly head of the department, Lewis J. Johnson, George C. Whipple and Hector J. Hughes; and likewise mechanical engineering has the name of Lionel S. Marks; while the name of S. H. Woodbridge, so many years in this list, is missing, he having been retired.

In mining and metallurgy the name of R. H. Richards is gone, although his presence at the Institute has not ceased, and H. O. Hofman stands at the head of the list; while the names of Henry L. Smyth, Albert Sauveur, Edward D. Peters, Louis C. Graton, George S. Raymer and Charles H. White are interpolated into the list. In architecture Ralph Adams Cram heads the list, while the name of Albert LeMonnier is omitted for the present, he being in the service of his country. In electrical engineering Arthur E. Kennelly replaces Harold Pender as professor of electrical engineering and director of the research laboratory; while Harry E. Clifford and Comfort A. Adams are new names, the former, however, not new to Tech; for he is a graduate of the Institute. Biology remains as before with W. T. Sedgwick at its head, and physics likewise presents the same roster. Geology shows Professor Graton from the Harvard staff as professor of mining geology; while Frederic H. Lahee has been advanced from instructor to assistant professor of the main subject. In naval architecture Henry H. W. Keith has been advanced to assistant professor, in drawing and descriptive geometry, the death of Charles L. Adams and the retirement of Henry K. Burrison changes the list somewhat, while in the department of economics and statistics there is added an instructor, Martin J. Shugrue of the University of Michigan, it being remembered that

Professor Dewey, head of the department, is also executive head of Course XV, engineering administration. The personnel of the instructing staff in the other departments remains practically unchanged.

The important new courses that the catalogue of Technology introduces are engineering administration and aërodynamics, while in the departments some new features have been introduced such as the elective advanced course in mathematical laboratory, where there will be studied methods of checking for accuracy, numerical solutions of algebraic and other equations, graphical methods, instruments fitted for work of the kind such as slide-rules, planimeters and integraphs and other factors to current methods of figuring along engineering lines.

Engineering administration has been an attractive subject and the number of students, between fifty and sixty, applying for the course has been a surprise. There are three options: civil, mechanical and electrical, with the same foundation and differentiated in the special details. The course touches all the essentials in business practices and is one well adapted to the growing place of the engineer, who is coming into his own in the management of large affairs.

The course in aërodynamics, under Lieutenant Hunsaker, has attracted already a number of men, one of whom is Captain V. E. Clark, U.S.A., and another is S. M. Chow, B.S., an M.I.T. graduate of last year; while a number of other students in the school are taking the preliminaries that will lead to fuller courses later.

The School for Health Officers finds place for the first time in the Technology catalogue, under the chairmanship of Prof. W. T. Sedgwick, with Dr. M. J. Rosenau, director, and George C. Whipple, secretary; a school in which registration is very gratifying.

The matter of the Cambridge scholarships is taken up in the catalogue, and the definite statement recently made by President Maclaurin to the mayor of Cambridge, is here officially set forth. It reads thus: "A limited number of scholarships are granted to students about to enter the first year class at the Institute, who are graduates of schools of Cambridge and children of legal residents of that city. These scholarships are awarded by competition on the results of the regular entrance examinations at the Institute held in June of each year. They are confined to students who furnish evidence of need, obtain clear records and

reach the standard required by the Faculty for scholarship aid. Those to whom scholarships are awarded in the first year receive scholarships in their second, third and fourth years provided they maintain a scholarship record in the previous year and continue to furnish evidence of need. The amount of each scholarship is $250 in the form of remission of tuition fees."

Cambridge Invites Experts

As a result of the conference between Mayor Good of Cambridge and representatives of the Institute and of Harvard University, these two institutions had been asked to assist Cambridge in working out a more scientific method of valuing property for assessment. For some time the method in use in Cambridge has failed to give satisfaction, and there is a strong demand for some kind of change.

In accordance with this request President Maclaurin has appointed Professor Charles M. Spofford, Hayward professor of civil and sanitary engineering. Harvard has already appointed Professor Charles J. Bullock, among the foremost of the authorities in the country on economics. Technology contributes to this advisory board an engineer, so that not only may the economic side be considered but that view which includes the practical and mechanical.

Professor Spofford is a fortunate choice, evidencing the desire of the Institute to put its best technical men at the service of the municipalities of the state. He is a native of Georgetown, Mass., a graduate, '93, and a post-graduate of M. I. T. and has been identified with Tech almost constantly since 1895, having been Hayward professor the last half-dozen years. He has had much practical experience, first with the Phenix Bridge Company, and in later years has been consulting engineer for municipalities in important constructions, one of these being the determination of the strength of the Blackwell's Island bridge. The firm with which he is identified, Fay, Spofford & Thorndike, has been made consulting engineer in the proposed million-dollar improvement of the Quequechan River at Fall River. He comes therefore to the consideration of municipal problems with abundant experience.

THE NEW AËRODYNAMIC LABORATORY

First institution of its kind in the country is now in full operation

The new aërodynamic laboratory of the Institute of Technology was formally opened December 15. A collation was given at the University Club, where Henry A. Morss, '93, was host to a number of members of the Corporation and the Faculty, including President Maclaurin and a number of invited guests: A. F. Zahm, Ph.D., of the Smithsonian Institution, Professor George E. Hale, '90. director of the Mount Wilson Solar Observatory, Professor Alexander McAdie, director of the Blue Hill Observatory, John L. Saltonstall, Edwin A. Boardman, Naval Constructor T. G. Roberts, Naval Constructor William McEntee, Greely Curtis, Dr. John W. Elliot, William H. Lincoln, John M. Longyear, Naval Constructor W. J. Baxter, and Mr. James Means. Professor Peabody, head of the Department of Naval Architecture, assisted by Professor Everett and Professor Keith, made the introductions.

Following the luncheon the guests were transferred to the new Technology aërodynamic laboratory at Cambridge, the first permanent building on the new site, where Lieutenant Jerome C. Hunsaker, U. S. N., M. I. T. '12, under whose direction the courses are being given actuated the machinery and explained the apparatus.

The new laboratory is the first institution in the country, and probably in the world, to establish regular courses in the principles underlying aërial flight. In recognition of this the Smithsonian Institution sent to represent it Dr. Zahm, who has followed former director S. P. Langley of the Institution in being the head of the experts on the action of the atmosphere and wind, while Professor McAdie as the director of the Blue Hill Observatory represents the most active institution in the world in initiating and carrying forward the study of conditions at those heights to which the aëroplane must rise.

The Aëro Club of America, likewise was represented, but by friendly greetings and not by an individual, transmitting to the Institute the following telegram: "The Aëro Club of America

sends greetings to the Massachusetts Institute of Technology. We congratulate you upon the inauguration of a real aërodynamic laboratory where experimental and research work may be carried on to the advancement of the art and the science of aviation. It is to be hoped that this laboratory may prove efficient in the elimination of much time, money and effort hitherto unwisely expended. We are sorry that we are unable to send a delegate to represent us at this auspicious occasion, but our felicitations are none the less hearty and sincere and in behalf of the board of governors of the Aëro Club of America we wish you in this worthy undertaking a full measure of success." Signed, Alan R. Hawley, president; Howard Huntington, secretary.

The occasion brings to light the spirit of Technology to avail itself of all the existing forces in the community. This is made evident in the invitation to Dr. McAdie of Blue Hill, who is a Harvard professor, to give to the students in the special courses a fundamental knowledge of the upper air conditions. In other countries where the actual practise of flying has advanced through dint of much fatal experience to a point far ahead of anything attained here, the necessity is recognized of men who are able to determine the probable safety of flight under existing weather conditions. This factor to flight, Technology recognizes at the outset, and with Blue Hill so near at hand, the creation of A. Lawrence Rotch, member of the Tech Corporation and intensely interested in its progress, preëminently the institution where studies of the kind have been prosecuted, it has extended to Professor McAdie, through President A. Lawrence Lowell, an invitation to give to the students in aërodynamics special courses in applied meteorology, or in the current terminology, aërology. Such studies will form a part of future courses in aviation.

At the laboratory in Cambridge, Lieutenant Hunsaker explained the apparatus, which includes a four-foot blowing tunnel in which velocities may reach forty miles an hour. A seven-foot fan sucks the air through the tunnel, in the center of which, where the air currents are most regular and steady, there are arrangements for placing the various devices to be tested. The most novel feature of the equipment is the aërodynamical balance, an instrument measuring forces in any one of three directions. It measures wind pressure, the twist due to inequalities of pressure and the lift and is adaptable to all kinds of surfaces. Thus the effect of

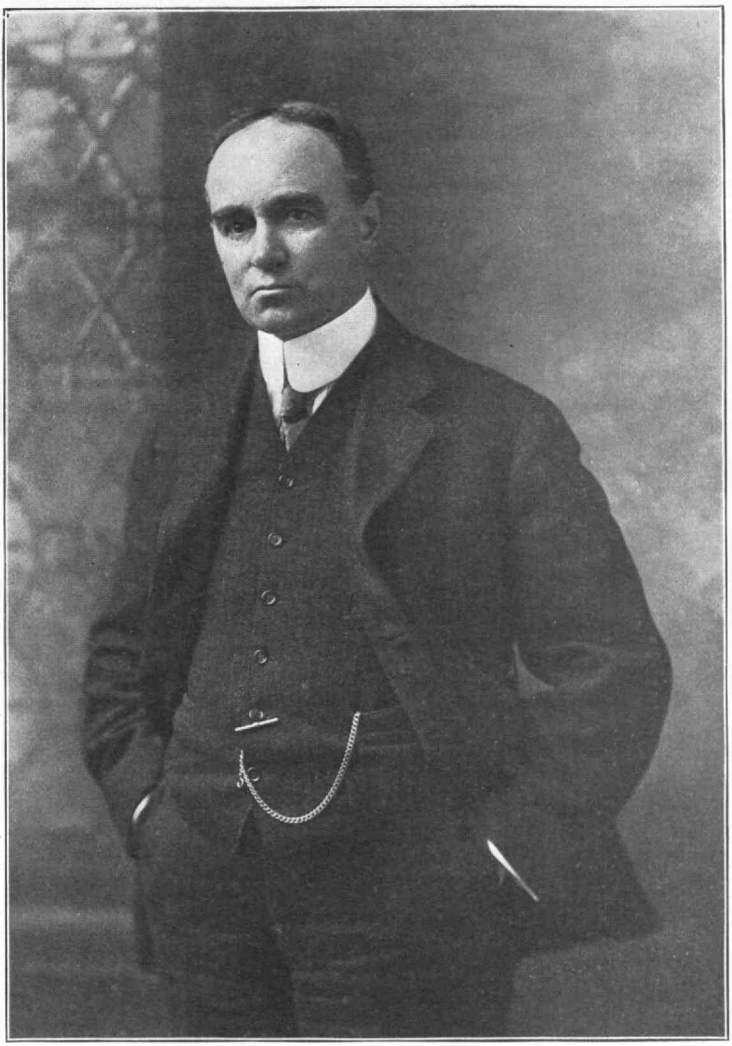
the wind on planes may be determined, or on such complex things as propellers or even different forms of sails. The balance is of the pattern of that devised for the National Physical Station at Teddington, England, which institution permitted Technology to use its patterns and the instrument for America was made at shops in Cambridge, England. It was accorded the honor of a special social meeting of the Royal Academy before coming to this country and has now been in position long enough to be regularly at work. In fact the readiness to do things struck the guests, Dr. Zahm remarking that the laboratory is already achieving results.

The position of Technology in the matter of aëronatation has excited wide interest among scientific men. It is in a position to get directly at principles, and by doing this it will conserve life and effort, since the rule-of-thumb methods which have prevailed everywhere have often advanced through some accident to the investigators. The courses are in line with the far-seeing policy of Rogers, the founder and first President of the Institute, to have men ready for the possible needs of the future. In this new science it is realized that the principles must be mastered and men prepared who can solve the problems in a philosophical way as they arise. Already the Government has recognized the value of the new courses and it is proposed by the Signal Service to supply officers for special training along the special lines of aërial study at Technology.

Result of the Alumni Election

Announcement of the recent election for officers of the Alumni Association and term members of the Corporation was made at the December meeting of the Council, the polls having closed December 20.

The candidates elected are as follows: For president, one year, Henry J. Horn, '88; vice-president, two years, J. L. Mauran, '89; secretary-treasurer, one year, Walter Humphreys, '97; members of the executive committee, two years: M. C. Brush, '01, W. K. Lewis, '05; for representatives-at-large on the Council, two years: W. D. Cooolidge, '96, P. L. Dougherty, '97, Leonard C. Wason, '91, Col. W. D. Sohier, '78, Raymond B. Price, '94; for term membership on the Corporation, five years: William H. King, '94, J. W. Rollins, '78, Jasper Whiting, '89.



HENRY J. HORN '88
President of the Alumni Association

RELATIVE STANDING OF STUDENTS

An analysis of the work of preparatory schools, classes, departments, foreign students, students from other colleges, students engaged in undergraduate activities and fraternity men

People of the Institute have frequently heard others say that such a one was graduated from the Institute with honors and have wondered how such information started. Twenty years ago there was a mark of "H" meaning passed with honor but it was abolished. It has also been reported that such a student was graduated at the head of his class, or of his course, but there has been no foundation for this report.

There is no honor society at Technology and there has been no need to know how the record of a student in mechanical engineering, for instance, compared exactly with the record of another in electrical engineering, or in physics. The scholarship committee has had to know the standing of the applicants for scholarships but the records of these students have been estimated by the members of the committee whose judgment has become trained. Until now, so far as it is known, there has been no mechanical or arithmetical way used to compare records.

Within the last few years reports of the relative standing of fraternities at several colleges and of those of the athletes and of those of the students not engaged in athletics have been published. It is interesting to know how various organizations of students and students from various preparatory schools stand relatively at Technology.

To compare a student in one course who has three of our highest records with one of another course who has two of our highest records, that is has two "C's," and to judge the former better than the latter because he has one more C than the other is not fair because the time devoted to the subjects in which the first student had the C's may not be as much as the time given to one of the subjects in which the other student had one of his C's.

Our professional courses have work outlined for each term of fifteen weeks amounting to 720 hours of exercise and preparation. Hence, each student taking full work has in each week 48 hours of classroom, or laboratory exercises, and home work.

In the method used to measure the standing of various groups of students the record of every student in each subject has been weighted according to the number of hours per week assigned to the subject. If a drawing or laboratory subject has four hours a week it will not influence a student's record as much as a subject in which there are four hours of classroom work because, in general, drawing and laboratory exercises have no hours of preparation assigned to them while classroom work, frequently, at the Institute has twice as many hours of preparation assigned as classroom hours. Technology is one of the few colleges where the outside hours of preparation are prescribed.

According to the Faculty rules records are sent to students in the terms: C, passed with credit; P, passed; L, passed with low standing; F, failed; and FF, failed completely and the subject must be repeated.

Some instructors and some departments return a literal record and a record in per cent. Some of the records in per cent. are reported in exact per cents., while others to the nearest per cent. which is a multiple of five. As all records are not accompanied by per cents. and all the percentage records are not uniformly reported by instructors, the original records of one student cannot be compared with those of another student justly.

A practical method has been chosen where the literal records have been given a factor which corresponds very generally with the average per cent. in the practice of many of the instructors. By this method a student having a record entirely of C's would not have 4,800 points because 100 per cent. has not been assigned to C, nor would one whose record was all FF have a zero record because a small factor has been assigned to FF. However, there is a maximum number of points which a student can obtain under this method.

A student taking less than full work could not obtain the maximum record even though his record was all C and on the other hand one taking full work and extra subjects might obtain a record greater than the normal maximum which reduced to per cent. would read more than a hundred per cent. The students taking less than full work have an opportunity to do better in the fewer subjects and those taking more than full work can make the maximum number of points even with lower records in several of the subjects. In planning this method for comparing records it was

discussed whether, or not, a factor should be used to multiply the points made by the students taking more or less than the required hours of work. This correcting factor has, however, not been used.

All of the records of the undergraduate students of June, 1914, have been recorded on separate cards and weighted according to the hours and each literal record has been multiplied by the chosen factor. The total number of points has been found for each student. Each card has been labelled with the year and the course of the student and a memorandum has been made of the fraternity, athletic interests, or student activity of each student. This catalogue of 1,511 records has been divided into many groups and the total of each group and of each year within the group has been noted. Some of the results are here noted.

Several years ago in the President's Report it was stated that students from certain technical high schools did not do as well as those who came to the Institute from the ordinary high school. It is found by this review of the records of our students that while students from the public schools averaged 74 per cent. in the first year, those from the technical high schools averaged 70 per cent. In the four years together they averaged 71 per cent. and 67 per cent., respectively. During the period since this report there has been no change in the relative positions of these two types of schools. It is true, however, that some of the Technical schools furnished us with students better prepared for our work than others.

Dividing the complete set of records by classes it is found that the first-year students average 69 per cent. of the points and that the second-year class dropped to 63 per cent. and that the third-year class rose to 69 per cent. and that the fourth-year class attained an average of 71 per cent. The student body as a whole made an average of 68 per cent.

The drop in the average for the second year might be due to the fact that professional work, in general, is met by the students for the first time. In the case where the course has been wrongly chosen the students might naturally not be expected to excel. The gain in the third year with a continued gain in the fourth year is what the Faculty might hope for.

Analyzing the records of courses it is seen that in almost all of the courses there is this general drop in the second year and a gain in the third year which continues through the fourth year.

Dividing the students into groups of courses one of which is engineering in character and another more purely scientific in character and a third group of architectural students, it is found that the same variation exists in the engineering courses as noted above. While the average record of all students is 68 per cent., that of all the engineering students is also 68 per cent. The average here is the same in the second and fourth years but the per cent. in the third year is slightly below the general average.

In the science courses the record of the second year is distinctly higher than the general average. It is also higher in the third year but drops some in the fourth year. The average of these three years is, however, above the general average.

In the architectural department the second-year students are below the average, the third-year students are slightly above and the fourth-year students are a little below. Their total average is somewhat below the general total. It is known that our architectural students tend to devote more time to their design problems and tend to neglect in the science studies; this reduces their general record of points. Their general record is relatively low because their average record is influenced to a greater extent by the larger number of students who take less than full work. There are more special students in this department than elsewhere. The special students in the second year take less work in common with the students of their class than do the special students of the fourth year.

Dividing the catalogue of records into groups of students who come to us from public schools and those of students who come to us from private schools it is found that public school students excel the private school students in their first-year record. While the students from the public schools made 74 per cent., those from the private schools made but 64 per cent. Just as has been noted above, the records of these two groups of students drop some in the second year and recover and gain in the third and fourth years. The general average of each group is 71 per cent. and 63 per cent. respectively.

The effect of the preparatory school would probably be shown more in the first year than in the succeeding years for it is fair to asssme that the influence of the training of the Institute should show itself upon the student to a greater extent each year.

The June records were chosen as a basis of comparison because

it was thought fairer to take the records of this term, as the first term for many of the students is their first term in the school and many fail to adjust themselves to the work and requirements of the Institute in one term.

A further comparison of records of students from public schools shows that those who come to us from points outside the state do best, those from outside the metropolitan district, next best, those from the metropolitan district and outside of Boston next best, and finally those from Boston proper average the lowest, but average a satisfactory grade.

It is natural to expect that those who come to the Institute from greater distances would more generally be a selected lot of students. For them the expense of travel and living away from home would make many give up the idea of attempting a course at the Institute unless their aptitude for our work had been shown by their standing in preparatory work while those living at home might venture to try our work even though their preparation did not convince them of their ability to pursue successfully a technical training.

A group of records made by students from foreign countries has been examined. In the first year, and a large number enter our work with our first-year class, their records are distinctly poorer than our average first-year record. Their records, however, do not fall in the second year but they steadily improve and gain in the higher years. It would seem likely that their academic record would be low at first until a greater familiarity with our language and customs is obtained.

Two other groups of students afford an interesting investigation. They are the students who come to us from other colleges. In one group are the students who have graduated elsewhere, while in the other are the students who have come to us, for one reason or another, without graduating.

But few of the graduates enter our first year so that these students' records are mostly in the upper three years. Their per cents. of the points made are 59, 70, and 73 and make a total average of 69. The non-graduates have a low record in our first year and raise it to an average of 73 in the fourth year and make a general average of 66 for the four years. It would seem as if those who are able to enter our higher years are the strong and tried

college students while those who enter lower and make but a poor average are those who have not been successful at other schools.

The comparisons so far have been made of students according to their method of preparing for the Institute or according to the district from which they have come.

It has been interesting to see how the records of students vary who have been concerned with student activities. The Faculty of the Institute has not assumed control over any of the student activities but there are three activities that have consulted the officers in regard to the standing of the students whom they have been considering for positions in their organizations and two of the three, namely, *The Tech* and *Technique* have shown splendid records. Their total averages, 73 and 70 per cent. respectively, both are higher than the total student average. "The Tech Show" has a record which is not quite so high. The first-year students engaged in it did exceedingly well but the second-year students dropped to a low average while those of the upper two years were not good.

The students engaged with the musical clubs perhaps found less time for their work than they needed for they have not made a high average nor has the improvement in the third- and fourth-year records been so noticeable.

The students engaged in the athletic events have commendable averages especially in the fourth year.

It has been suspected by members of the instructing staff that students engaged in wireless experiments have become so fascinated by this work that they have forgotten to realize the need of a thorough technical training to proceed further in their experiments. Hence, it is interesting to note that those connected with the wireless society in the first year and second year have made low records while those who have already had the first two or three years of our technical training and have engaged in further connection with this society have made decidedly better records.

It has sometimes been said that students who have an aptitude for mathematical or technical training are expected to become good chess players. Our first-year students who have been members of our Chess Club have made excellent records but the students of the upper classes have either played too much chess or have failed to know their need for study because their records have dropped to a very low standard.

At other colleges the records of the various fraternity chapters at these colleges have been published. Some of the fraternities that have chapters at Technology have requested from time to time records of their members and with the consent of these members duplicates of their records have been sent to the general governing boards of these fraternities. It is apparent that the influence of these governing boards has helped the standing of the students of these chapters.

The total average of all fraternity students is but little below the average made by the non-fraternity students. The average of the non-fraternity students might from its average be called a P+ record while that of the average fraternity student would in comparison be a P, a satisfactory record. The chapter which leads the list has an unusually high record for a group of students. In the lower part of the list the difference between the records of chapters is less than in the upper range.

In the first year the fraternity students have lower records than the non-fraternity students and the difference between the records of the two groups is greatest here. The difference between the records beyond this year becomes less and less.

The low first-year records of the fraternity students may be due to the fact that the fraternities at the Institute generally elect their new members from the first-year class and doubtless the first-year students are more or less upset by this procedure and do not recover from it before the end of the year. The gain in the fraternity records with the smaller difference between their records and those of the non-fraternity students suggests a wholesome influence within the chapters.

Following the custom of a number of other colleges and in order that the chapters of the fraternities at Technology may know where they stand relatively to each other and also that their alumni may help them continue their efforts to maintain good scholastic standing, we print a list of the chapters as they stood last June: Sigma Chi, Delta Kappa Phi, Phi Kappa Sigma, Delta Upsilon, Phi Gamma Delta, Alpha Tau Omega, Phi Sigma Kappa, Theta Xi, Phi Beta Epsilon, Delta Psi, Delta Kappa Epsilon, Theta Delta Chi, Beta Theta Pi, Lambda Phi, Lambda Chi Alpha, Theta Chi, Sigma Alpha Epsilon, Delta Tau Delta, Chi Phi.

WALTER HUMPHREYS, '97.

UNIQUE FEATURE OF PITTSBURGH MEETING

Course luncheons to be conducted on a novel and very interesting basis—Constructive criticism invited

One of the most striking and important developments in Institute affairs during recent years has been that of giving to the alumni a share in directing the general policy of their Alma Mater and the privilege of bearing a portion of administration. Unquestionably, a direct result of this change has been an awakening of interest in the Institute among the large body of men, and women, who have gone forth from her doors. We all value highly the privilege of being represented on the Corporation.

Most of the men who have spent four years, or less, at Technology and have made a success in the world of affairs have more or less definite views regarding the work which they took as undergraduates. Many of their ideas may be based upon an inadequate knowledge of pedagogical matters; many are the result of a narrow view of the aim and scope of the work given at Technology, but it does seem that from the many earnest, thinking members of the Alumni Association, it might be possible to gather valuable and practical suggestions regarding the courses of instruction offered to undergraduates at M. I. T. Hitherto, no regular or official channel for bringing these suggestions to the attention of the Faculty has been available. It is now at hand. An opportunity to express these views and to be officially heard by those responsible for the Institute policies of instruction is to be given at the Pittsburgh meeting of the Technology Clubs Associated, February 19 and 20.

The luncheon hour and early afternoon of the second day are to be given over to constructive criticism of the Institute courses. For this reason, allied courses are to be grouped, and each group is to have luncheon in a separate room, this to be followed by the discussions of the courses. Each of the courses is to be represented at these discussions by a Faculty member, who will receive the suggestions offered, answer questions raised, and, if necessary, defend the present policy of the course he represents. Furthermore, a competent stenographer will be present at each luncheon to make

a permanent record, not only of the papers and briefs, but of the oftentimes most valuable thoughts which the discussions will bring out.

Letters are being sent to the alumni in order that many of those attending these luncheons will be prepared to take part in the discussions. They are expected to freely express their views, to advocate specific additions to the curriculum, or modifications of its present form. Further than this, and perhaps of even greater importance, it is hoped that suggestions will be made indicating what the Institute can do to interest its students in public affairs, in order that after graduation they may be a strong influence on the side of good citizenship, and broad moral and ethical standards.

Constructive criticism is wanted—not the noisy sapping of the "knocker". It is manifestly impossible for the committee to elicit more than a small fraction of the suggestions and criticisms which might appropriately be brought out at this meeting. It is, therefore, hoped that all alumni and former students will coöperate with the committee, either by coming to Pittsburgh in person, or by forwarding written discussions to the associate secretary.

"*On to Pittsburgh, February 19th and 20th, 1915.*"

H. A. RAPELYE, '08, *Associate Secretary*, Oliver Building, Pittsburgh, Pa.

Tech Men in the War

Among the Tech men who are engaged in the opposing armies during the present European war, are Simpson Parkinson, who was hero of the Tech Show last year and who, as a native of London, Ontario, enlisted as an aide-de-camp on the over-seas contingent of the British Imperial Guard, now seeing service on the Continent; Edward Steere, '15, of Manitoba, a civil engineer; Werner T. Schaute, a member of the senior class in mechanical engineering, whose home is in Düsseldorf, Germany, it is understood, is in the army of the Crown Prince; Henry Lamy, '13, a graduate of the mining engineering course, who was serving his last year in military science when the war broke out, was among the first to be sent to the front. Paul Gautier, a Tech senior, is also reported as having joined the French army.

In addition to these, Professor Albert LeMonnier, of the architectural department, and Professor Duquesne, of Harvard and Technology, are fighting for the French colors.

THE NEW HIGHWAY ENGINEERING OPTION

Cordially endorsed by men who stand high in the profession—Enrollment equals that in sanitary engineering

The establishment by the civil engineering department of an option in highway engineering is in response to the gradually increasing demand for trained highway engineers, constructors and supervisors. While the civil engineering department has offered some instruction in highway engineering since the early nineties, and was at one time the recipient of an annual good roads fund from the late Col. Albert A. Pope, there was prior to the advent of the automobile little interest shown in this country in good roads and little incentive for one to give special attention to this phase of engineering. Moreover, the art of highway engineering as distinguished from other branches of civil engineering was comparatively simple and little special study was required to fit the civil engineering graduate of the Institute to enter upon highway engineering with equal facility to other branches of civil engineering in which he may have had special preparation.

The ever-increasing requirements imposed upon modern highways by motor driven vehicles has made it essential for the highway engineer to construct roads of great resisting qualities, and has resulted in the extensive use of tar and bitumens, the physical and chemical properties of which must be carefully studied by the engineer who is to specify methods of using and testing these compounds. Moreover, the tremendous extension in mileage of roads suitable for such traffic has made their scientific and economic construction far more important than ever before, thus making necessary the presentation of these subjects in some detail to the student of highway engineering.

The department has for several years had under consideration the project of establishing a special course in highway engineering, and the recent alliance with Harvard with the advantages coming from a larger staff of professors seemed to make the present year especially propitious for the inauguration of this work. The question of whether to offer an entirely new course or to establish an option in the present civil engineering course was discussed, but

the difference between the training of the highway engineer and that of the hydraulic or railway engineer seemed scarcely sufficient to warrant the establishment of anything more radical than a new option. In this new option no reduction has been made in the fundamental civil engineering subjects, but it differs from the two options previously offered by the substitution in the third year of chemistry of road making materials, highway drawing, highway specifications and testing of highway materials, for electrical engineering, railroad drawing and geodesy. In the fourth year all the fundamental professional subjects of the other options are maintained, but courses in highway construction and highway economics replace the optional subjects offered in railroad engineering or hydraulic engineering. In order to give the required work in testing, it has been necessary to establish a laboratory for testing highway materials for which a full set of equipment has been ordered. It is believed that this laboratory combined with the excellent laboratory in the chemical department for testing oils and bitumens, and with the applied mechanics laboratory with its extensive equipment of testing machines will be superior to any other highway testing laboratory in this country with the possible exception of that of the department of public roads at Washington.

The department has received the offer of cordial support by Logan Waller Page, Harvard '93, director of the Office of Public Roads, Washington, D, C.; Col. William D. Sohier, M. I. T. '78, chairman of the Massachusetts Highway Commission, and Arthur W. Dean, M. I. T. '92, chief engineer of the same body; George A. Ricker, M. I. T. '86, first deputy commissioner of the New York State Highway Commission; and Louis K. Rourke, M. I. T. '95, commissioner of public works of the city of Boston.

The Barber Asphalt Paving Company has also expressed its desire for coöperation and has verbally offered through Clifford Richardson, Harvard '77, and D. T. Pierce, executive assistant of that company, to provide for a fellowship in highway research.

That a demand for instruction in highway engineering exists is shown by the enrollment in this new option, which, while not large in itself, is only two less than that in the sanitary engineering course from the junior class, which is the only class eligible for work in the highway option this year, and is equal to the capacity of the chemical laboratory assigned to the course in the chemistry of road making materials.

In looking forward to the possibilities open to graduates of this option, it is interesting to note that in the year 1914 funds appropriated for state highway departments throughout the United States amounted to $43,858,463. This does not include the necessary appropriations for city streets nor for local roads. If the cost of engineering and supervision of these state highways be figured upon the moderate basis of 5 per cent., it is evident that engineers will receive $2,192,923.15 of this sum.

While the above figures seem enormous, they represent probably only a small portion of the total amount which will be spent in this country on improved roads during the next fifty years. These roads will have to be maintained under the supervision of trained men of whose honesty of purpose and sound judgment there can be no question. That the Institute training tends to produce such men will not be considered open to argument by alumni who may read this article.

CHARLES M. SPOFFORD, '93.

Sons of Tech Men at Tech

Following is a partial list of the sons of former students of the Institute who are now taking a course at Technology: Bryant, F. C., son of G. H. Bryant, '83; Darlington, F. G., Jr., son of F. G. Darlington, '81; Duff, P. H., son of John Duff, '81; du Pont, F. V., son of T. C. du Pont, '84; Freeman, H. T., and Freeman, J. R., Jr., sons of J. R. Freeman, '76; Hatch, P., son of F. C. Hatch, '95; Kennard, R. P., son of the late W. P. Kennard, '84; Kittredge, G. D., son of G. W. Kittredge, '77; Loveland, E., son of J. W. Loveland, '89; Mulliken, R. S., son of S. P. Mulliken, '87; Mead, E. A., son of F. S. Mead, '84; Main, T., son of C. T. Main, '76; MacRae, N., son of Hugh MacRae, '85; Pickering, H. B., son of O. W. Pickering, '90; Nute, A. D., son of J. E. Nute, '85; Norton, J. T., and Norton, F. H., sons of C. L. Norton, '93; Robinson, E. S., son of T. W. Robinson, '84; also Park, Miss Harriet, daughter of the late D. W. Park, '84.

Son Born to the President

A son, Richard Colin Maclaurin, was born December 26, to President and Mrs. Maclaurin. He is the second son in the family.

INTERESTING FIGURES OF REGISTRATION

One hundred and fifty-two colleges are represented at Tech by former students—One instructor to every 6.2 men—Forty-two candidates for advanced degrees

The registration figures for 1914–15 show strong advances everywhere. The total number of men registered at the Institute is 1,816; last year there were 1,685. The total number of new men is 727. Of these new men 433 are in the freshman class. The total number of men at the Institute who have attended another college coming here is 519 or 29.0 per cent. of the entire registration. The total number of new students from other colleges is 244 or 33.5 per cent. of the new men registered. The total number of graduates from other colleges enrolled at the Institute is 290 or 15.9 per cent. of the total registration. The total number of the teaching staff at the Institute is 291, which allows one instructor to every 6.2 men. There are 42 candidates for advanced degrees, and there are 14 women students.

The percentage of men from Massachusetts in the freshman class is 60.2. The percentage of men from Massachusetts in the entire school is 57.

There are 152 colleges represented here. The list of colleges represented and the number of men from each is as follows:

University of Alabama, University, Alabama, 3; Allegheny College, Meadville, Pa., 1; Amherst College, Amherst, Mass., 12; University of Arkansas, Fayetteville, Ark., 1; Armour Institute of Technology, Chicago, Ill., 2; Baltimore Medical College, Baltimore, Md., 1; Baltimore Polytechnique Institute, Baltimore, Md., 5; Bates College, Lewiston, Me., 3; Baylor University, Waco, Texas, 3; Beloit College, Beloit, Wis., 2; Berkeley Institute, Brooklyn, N. Y., 1; Boston College, Boston, Mass., 4; Boston University, Boston, Mass., 2; Bowdoin College, Brunswick, Me., 3; Polytechnic Institute of Brooklyn, Brooklyn, N. Y., 2; Brown University, Providence, R. I., 4; Bryn Mawr College, Bryn Mawr, Pa., 1; Buchtel College, Akron, Ohio, 2; University of California, Berkeley, Cal., 15; Canisius College, Buffalo, N. Y., 1; Carnegie School of Technology, Pittsburgh, Pa., 2; Case School of Applied

Sciences, Cleveland, Ohio, 3; Catholic University of America, Washington, D. C., 1; College of Charleston, Charleston, S. C., 1; University of Chicago, Chicago, Ill., 2; University of Cincinnati, Cincinnati, Ohio, 2; Clark College, Worcester, Mass., 2; Clark University, Worcester, Mass., 1; Clarkson Memorial School of Technology, Potsdam, N. Y., 1; Clemson Agricultural College, Clemson College P. O., S. C., 1; Colby College, Waterville, Me., 1; Colgate University, Hamilton, N. Y., 2; Colorado Agricultural College, Ft. Collins, Colo., 1; Colorado College, Colorado Springs, Colo., 2; University of Colorado, Boulder, Colo., 2; Colorado School of Mines, Golden, Colo., 2; Columbia University, New York City, 3; Cornell University, Ithaca, N. Y., 5; Creighton University, Omaha, Neb., 1; Dartmouth College, Hanover, N. H., 20; Denison University, Granville, Ohio, 3; University of Denver, Denver, Colo., 1; Dickinson College, Carlisle, Pa., 1; Doane College, Crete, Neb., 1; Drake University, Des Moines, Iowa, 1; Earlham College, Richmond, Ind., 1; Fargo College, Fargo, N. D., 1; University of Florida, Gainesville, Fla., 1; Furman University, Greenville, S. C., 1; Georgia School of Technology, Atlanta, Ga., 3; Georgetown University, Washington, D. C., 3; University of Georgia, Athens, Ga., 1; Gonzaga College, Spokane, Wash., 2; Hamilton College, Clinton, N. Y., 3; Harvard University, Cambridge, Mass., 27; Haverford College, Haverford, Pa., 2; Holy Cross College, Worcester, Mass., 1; Hospital College of Medicine, Louisville, Ky., 1; University of Idaho, Moscow, Idaho, 1; University of Illinois, Urbana, Ill., 8; Iowa State College, Ames, Iowa, 1; James Milliken University, Decatur, Ill., 1; Jefferson Medical College, Philadelphia, Pa., 1; Johns Hopkins University, Baltimore, Md., 1; Juniata College, Huntingdon, Pa., 1; Kalamazoo College, Kalamazoo, Mich., 2; Kansas City University, Kansas City, Kan., 1; Kansas State Agricultural College, Manhattan, Kan., 1; State University of Kentucky, Lexington, Ky., 1; Kenyon College, Hodgenville, Ky., 1; Lafayette College, Easton, Pa., 2; Lawrence College, Appleton, Wis., 1; Loyola University, Chicago, Ill., 2; Leland Stanford Junior University, Stanford University P. O., Calif., 3; Lewis Institute, Chicago, Ill., 1; Louisiana State University, Baton Rouge, La., 1; University of Maine, Orono, Me., 5; Marietta College, Marietta, Ohio, 1; Massachusetts Agricultural College, Amherst, Mass., 6; University of Michigan, Ann Arbor, Mich., 7; Michigan College, Johnson City, Tenn.,

1; Michigan State Agricultural College, Agricultural Col. P. O., Mich., 1; Middlebury College, Middlebury, Vt., 2; University of Minnesota, Minneapolis, Minn., 2; Mississippi Agricultural and Mechanical College, Agricultural College P. O., Miss., 3; Mt. Holyoke College, South Hadley, Mass., 2; Mt. St. Mary's College, Emmitsburg, Md., 1; University of Nebraska, Lincoln, Neb., 1; University of New Mexico, Albuquerque, N. M., 1; College of the City of New York, New York City, 2; University of North Dakota, University P. O., N. D., 1; Northwestern University, Evanston, Ill., 1; Norwich University, Northfield, Vt., 4; Oberlin College, Oberlin, Ohio, 1; Ogden College, Bowling Green, Ky., 1; Ohio Wesleyan University, Delaware, Ohio, 3; Oregon State Agricultural College, Corvallis, Ore., 1; University of Oregon, Eugene, Ore., 1; Park College, Parkville, Mo., 1; Pennsylvania College, Gettysburg, Pa., 1; Pennsylvania Military College, Chester, Pa., 1; Pennsylvania State College, State College, Pa., 3; University of Pennsylvania, Philadelphia, Pa., 5; University of Pittsburgh, Pittsburgh, Pa., 4; Princeton University, Princeton, N. J., 7; Purdue University, La Fayette, Ind., 4; Radcliffe College, Cambridge, Mass., 2; Randolph-Macon College, Ashland, Va., 1; Richmond College, Richmond, Va., 1; University of Rochester, Rochester, N. Y., 6; St. Johns College, Annapolis, Ind., 2; St. Lawrence University, Canton, N. Y., 1; St. Mary's College, St. Mary, Kansas, 1; St. Olaf College, Northfield, Minn., 1; Santa Clara College, Santa Clara, Calif., 1; Simpson College, Indianola, Iowa, 2; Smith College, Northampton, Mass., 1; South Carolina Military Academy, Charleston, S. C., 1; University of the South, Sewanee, Tenn., 1; University of Southern California, Los Angeles, Calif., 1; Spring Hill College, Mobile, Ala., 3; Stevens Institute of Technology, Hoboken, N. J., 5; Susquehanna University, Selinsgrove, Pa., 1; Syracuse University, Syracuse, N. Y., 6; University of Tennessee, Knoxville, Tenn., 2; University of Texas, Austin, Texas, 7; Texas Agricultural and Mechanical College, College Station, Texas, 2; Transylvania University, Lexington, Ky., 1; Throop Polytechnic Institute, Pasadena, Calif., 1; Tufts College, Tufts College, Mass., 10; Tufts Medical College, Boston, Mass., 2; Tulane University, New Orleans, La., 1; Union College, 1; United States Military Academy, West Point, N. Y., 2; United States Naval Academy, Annapolis, Md., 9; Ursinus College, Collegeville, Pa., 1; University of Utah, Salt Lake City, Utah, 1;

University of Virginia, Charlottesville, Va., 4; Virginia Christian College, Lynchburg, Va., 1; Virginia Military Institute, Virginia, 3; Washburn College, Topeka, Kansas, 1; Washington and Jefferson College, Washington, Pa., 1; Washington and Lee University, Lexington, Va., 1; Wesleyan University, Middletown, Conn., 2; Western Reserve University, Cleveland, Ohio, 2; Whitman College, Walla Walla, Wash., 1; Williams College, Williamstown, Mass., 17; College of William and Mary, Williamsburg, Va., 1; University of Washington, Seattle, Wash., 3; University of Wisconsin, Madison, Wis., 3; University of Wooster, Wooster, Ohio, 2; Worcester Polytechnic Institute, Worcester, Mass., 10; Yale University, New Haven, Conn., 22.

Foreign institutions and universities represented: Anglo-Chinese College, China, 1; Anhui Provincial College, China, 1; Armenian National Higher Academy, 1; Central Turkey College, 1; Chekiang Provincial College, 1; University of Chile, Santiago, Chile, 1; Chi-li Provincial, China, 1; Chinese Naval College, Nanking, China, 3; École Polytechnique, Montreal Canada, 2; Dalhousie University, Halifax, Nova Scotia, 2; Euphrates College, Turkey, 2; Foochow Provincial, 1; Institute of Havana Cuba, 1; Imperial Polytechnic College, Shanghai, China, 6; Japanese Imperial University, Tokyo, Japan, 1; Kiang Nan Provincial College, China, 2; University of Manitoba, Winnipeg, Manitoba, Canada, 3; National University, Paraguay, 1; Peking University, China, 2; Agricultural College, University of the Philippines, Manila, 1; Presidency College, Calcutta, India, 1; Prince of Wales College, 1; Queens University Kingston, Canada, 1; Railway Technical College, Shanghai, China, 1; Gymnasium of Salonica, Turkey, 1; Scientific and Literary Institute, Chihuahua, Mexico, 1; Stonyhurst College, England, 1; National College of Syria, 1; Syrian Protestant College, Beirut, Syria, 3; Tangshan Engineering and Mining College, 2; Technical High School, Charlottenburg, Germany, 2; Technikum, Mittweida, 1; Tiflis Real School, Tiflis, Russia, 1; Tomsk Technological Institute, Tomsk, Siberia, 1; Toronto University, Canada, 2; Trinity College, Cambridge, England, 3; Tsing Hua College, 4; Wuchang Provincial College, China, 1.

The number of foreigners at the Institute is slightly in advance of last year. The registration this year shows 114 men from foreign countries or 6.2 per cent. of the entire registration.

The countries represented are as follows: Austria Hungary, 2; Brazil, 4; Canada, 15; Cape Colony, 1; Central America, 2; China, 46; Columbia, 3; Cuba, 3; Denmark, 1; Egypt, 1; England, 1; France, 2; Germany, 2; Greece, 1; Guatemala, 1; Honduras, 1; India, 2; Japan, 1; Mexico, 7; Paraguay, 1; Peru, 3; Russia, 6; Scotland, 1; Syria, 2; Turkey, 6.

Local Alumni Luncheons

The Southwestern Technology Association of Birmingham, Alabama, at the Turnverein, Saturdays at 1.00 p. m.

Buffalo has a luncheon at the Buffalo Chamber of Commerce on the first Thursday of every month at 12.30 p. m.

The Northwestern Association, Chicago, meets every Tuesday at the Morrison Hotel at 12.30.

The Cincinnati M. I. T. Club convenes in the main dining-room of the Bismarck, Mercantile Library Building, Tuesdays, from 12.30 to 2.00 p. m.

The Dayton Technology Club meets Fridays, at 12.15 at the Rike-Kumler restaurant.

In Denver, the Rocky Mountain Technology Club has a luncheon every Wednesday from 12.30 to 1.30 p. m. at the Colorado Electric Club, Chamber of Commerce Bldg.

The Indiana Association meets the 15th day of each month at the University Club, Indianapolis.

The Technology Club of Southern California meets at the University Club, Los Angeles, on the first Wednesday noon of every month.

The Technology Club of Milwaukee has luncheon at the University Club every Thursday noon.

The San Francisco members of the Technology Association of Northern California have luncheon at Jules Café on Tuesdays.

In Seattle the Technology Club of Puget Sound has luncheon on the third Friday of each month at 12.15 at the College Club, Fifth avenue and Seneca street.

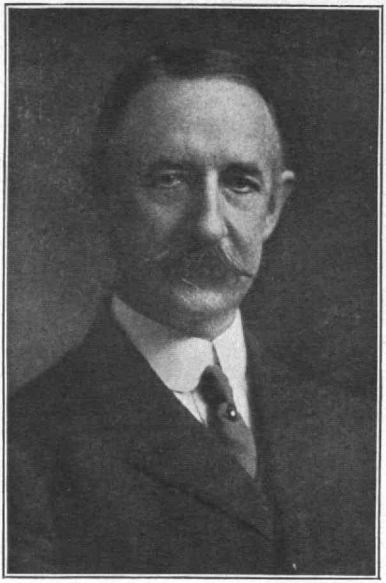
NEW PROFESSORS FROM HARVARD

Brief sketches of the men who come to Technology from Harvard

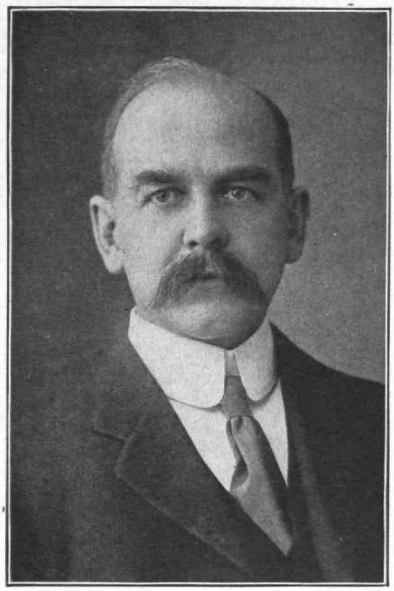
We present in the REVIEW this month pictures of most of the professors from Harvard who have recently become members of the Technology Faculty. In connection therewith the following brief sketches will be of interest.

Comfort Avery Adams, Abbott and James Lawrence professor of electrical engineering, was born in Cleveland, Ohio, in 1868. He received the degree of S.B. from Case School of Applied Science, Cleveland, in 1890, and the degree of E.E. in 1905; assistant in physics, Case School of Applied Science from 1886–1890; student in the Graduate School of Arts and Sciences, Harvard, from 1891–1893; engineer, Brown Hoisting & Conveying Machine Co., September to December, 1890; designing engineer, Brush Electric Co., December, 1890, to September, 1891; instructor in electrical engineering at Harvard, 1891–1896; assistant professor of electrical engineering, 1896–1906; professor of electrical engineering at Harvard since 1906; member of the International Jury of Awards (department of electricity), St. Louis Exposition, 1904; author of "Dynamo Design Schedules," also articles on kindred subjects; fellow: American Academy of Arts and Sciences, American Association for the Advancement of Sciences, American Physical Society, American Institute of Electrical Engineers; member: British Institution of Electrical Engineers, National Electric Light Association, Illuminating Engineering Society, Society for the Promotion of Engineering Education, Sigma Xi Research Society, M. P. Club of Boston, Economic Club of Boston, Engineers Club of New York, Harvard Travelers Club, Oakley Country Club, Cambridge Boat Club, Cambridge Dramatic Club, etc., consulting engineer for various interests.

Harry Ellsworth Clifford, Gordon McKay professor of electrical engineering, was born in Lowell, Mass., in 1866. In 1886 he received the degree of S.B. from the Massachusetts Institute of Technology; he is also a graduate student of Harvard University.

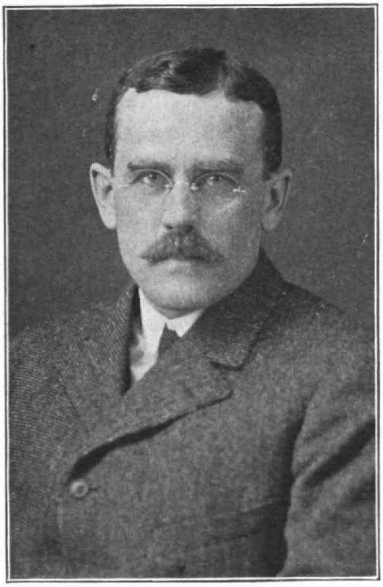


GEORGE F. SWAIN
Gordon McKay Professor of Civil Engineering

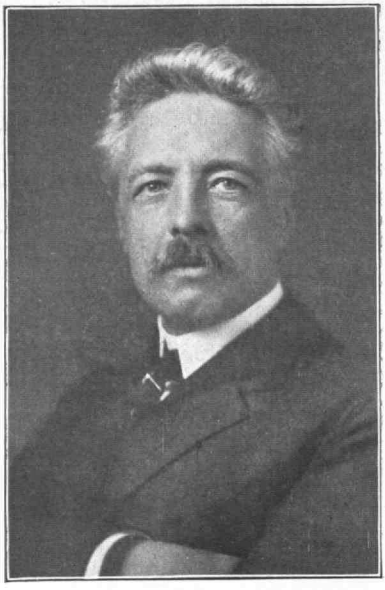


GEORGE C. WHIPPLE
Gordon McKay Professor of Sanitary Engineering

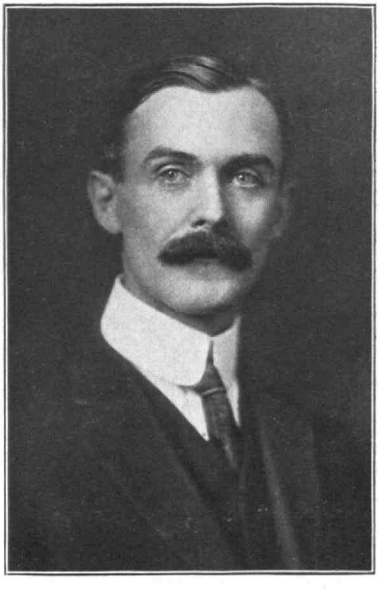
LEWIS J. JOHNSON
Professor of Civil Engineering



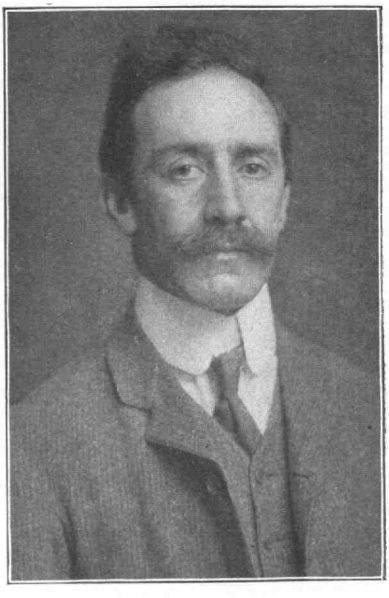
HECTOR J. HUGHES
Professor of Civil Engineering



ALBERT SAUVEUR
Professor of Metallurgy and Metallography

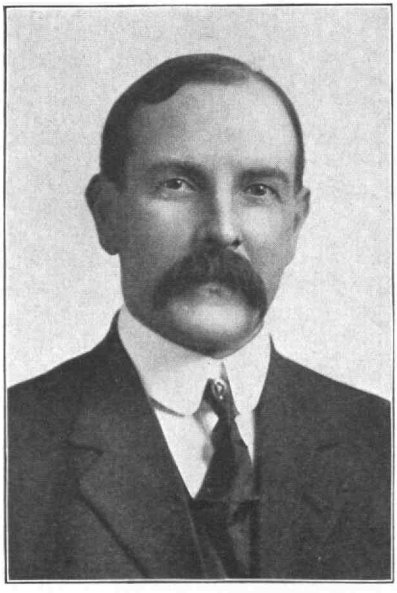


ARTHUR E. NORTON
Assistant Professor of Engineering Drawing

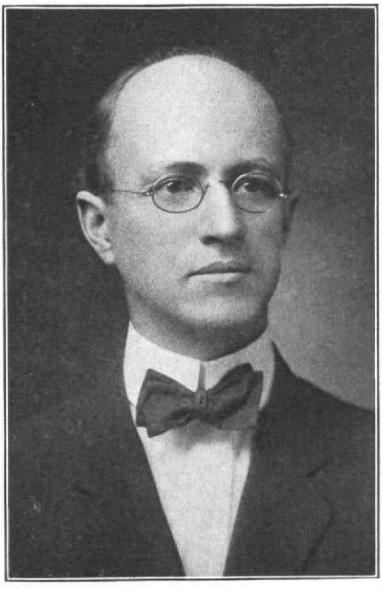


LIONEL S. MARKS
Professor of Mechanical Engineering

HARRY E. CLIFFORD
Gordon McKay Professor of Electrical Engineering



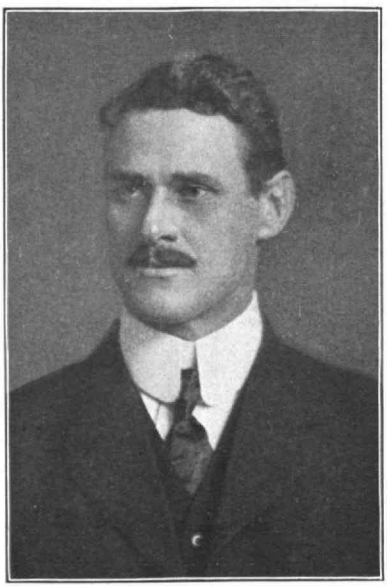
ARTHUR E. KENNELLY
Professor of Electrical Engineering
Chairman of the Staff of the Research Laboratory of Electrical Engineering



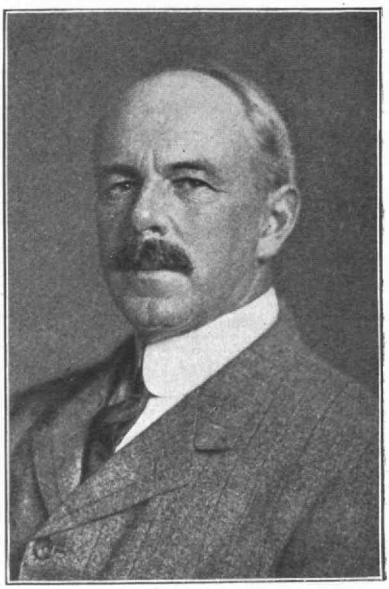
COMFORT A. ADAMS
Abbot and James Lawrence Professor of Electrical Engineering

HENRY L. SMYTH
Professor of Mining and Metallurgy

EDWARD D. PETERS
Gordon McKay Professor of Metallurgy



CHARLES H. WHITE
Assistant Professor of Mining and Metallurgy



GEORGE S. RAYMER
Assistant Professor of Mining

He was assistant in physics at the Institute of Technology from 1886–1888, instructor in theoretical physics from 1888–1895, assistant professor of theoretical physics from 1895–1902, associate professor of theoretical and applied electricity from 1902–1904, and professor of theoretical and applied electricity from 1904–1909; since 1909 he has been Gordon McKay professor of electrical engineering at Harvard University. He is a fellow of the Illuminating Engineering Society, Circolo Matematico di Palermo, National Electric Light Association, New England Street Railway Association; fellow of the American Academy of Arts and Sciences, American Association for the Advancement of Science, and the American Institute of Electrical Engineers. He has also been a frequent contributor to technical journals.

Louis Caryl Graton, professor of mining geology, was born at Parma, N. Y., in 1880. He was graduated from Cornell University in 1900 with the degree of B.S., and became connected with Harvard in 1909. He is a member of the American Institution of Mining Engineers, Mining and Metallurgy Society of America, Geological Society of Washington, Washington Academy of Sciences, American Academy of Arts and Sciences; fellow of the Geological Society of America. He is author of geological reports upon ore deposits and mining regions, mostly published by the United States Geological Survey, and is now engaged in the study of ore deposits, especially secondary enrichment of copper ores.

Hector James Hughes, professor of civil engineering, was born in Centralia, Pa., in 1871. He received the degree of A.B. from Harvard University in 1894, and S.B. from the Lawrence Scientific School (H. U.) in 1899. He was assistant in the office of the town engineer of Brookline from 1894–1898; assistant engineer of maintenance of way, C., B. & Q. R. R., Chicago, 1899–1900, and resident engineer in charge of construction, C., B. & Q. R. R., in Iowa from 1900–1902. He was with the American Bridge Company, Pittsburgh, in 1902. He became instructor in civil engineering at Harvard in 1902, in 1903 assistant professor, in 1913 associate professor, and in 1914 professor of civil engineering. He has also been in practice as a consulting engineer since 1906. He is a member of the American Society of Civil Engineers, Boston Society of Civil Engineers, American Society for Testing Materials, Society for the Promotion of Engineering Education, International

Association of Navigation Congresses, American Highway Association, and the American Association for the Advancement of Science.

Lewis Jerome Johnson, professor of civil engineering, was born in Milford in 1867. He received the degree of A.B. from Harvard in 1887, and of C.E. from the Lawrence Scientific School in 1888. He was a student at the Federal Polytechnikum, Zürich, from 1888-1889, and at the École des Ponts et Chausees, Paris, from 1889–1890. He was appointed instructor of civil engineering at Harvard in 1890, and with the exception of two years when he was practicing in Chicago, he has been connected with the University ever since. He has been professor of civil engineering at Harvard since 1906. He is a fellow of the American Academy of Arts and Sciences; a member of the Boston Society of Civil Engineers, American Society of Civil Engineers, Society for the Promotion of Engineering Education, American Society for Testing Materials, Massachusetts Direct Legislation League, Massachusetts Single Tax League Concrete Institute; vice-president of the Anti-Imperial League; joint designer of the Harvard stadium. He is author of "Statistics by Algebraic Methods, 1903," and a contributor to engineering journals. He is also joint author of the proposed new charter for Cambridge.

Arthur Edwin Kennelly, professor of electrical engineering, was born at Bombay, West Indies, in 1861. He received the degree of D.Sc. from the Western University of Pennsylvania. He was submarine telegraph operator in 1887; assistant electrician in cable-repairing ship, 1879; electrician in charge of submarine cable repairs in 1881; senior ship's electrician of Eastern Telegraph Cable Company in 1886. He was principal electrical assistant to Thomas A. Edison from 1887–1894; was associated with Professor Edwin J. Houston in the firm of Houston & Kennelly, consulting electrical engineers, Philadelphia, from 1894–1901. He has been professor of electrical engineering at Harvard since 1902. He was engineer in charge of laying Mexican Government Mexican Gulf cables in 1902; president of the American Institute of Electrical Engineers, 1898–1900; Society for the Promotion of Metric System of Weights and Measures, 1904; honorary fellow of the New York Electrical Society; American Electro-Therapeutic Association; fellow of the Royal Association for the Advancement of Science (Great Britain);

member of the Institution of Electrical Engineers (Great Britain); general secretary and United States delegate to the International Electrical Congress, St. Louis, 1904; elected juror at exhibitions, Philadelphia, 1898, Buffalo, 1901, St. Louis, 1904. He is author of "Electrical Notes for Electrical Students" (with Wilkinson), "Theoretical Elements of Electro-Dynamic Machinery, 1893," also with Professor Edwin J. Houston, "Electrical Engineering Leaflets, 1897," "Elementary Electro-Technical Series," "Electro-Dynamic Machinery," "Recent Types of Electro-Dynamic Machinery," "Electricity Made Easy," "The Interpretation of Mathematical Formulae," "Wireless Telegraphy," "The Application of Hyperbolic Functions to Electrical Engineering Problems," also numerous articles, monographs and papers in technical magazines.

Lionel Simeon Marks, professor of mechanical engineering, was born at Birmingham, England, in 1871. He was graduated from Mason College, Birmingham, receiving his engineering diploma in 1891; received the degree of B.Sc. from London University in 1892; came to America in 1893, received the degree of M.M.E., Cornell University, in 1894. Instructor in mechanical engineering at Harvard from 1894–1900, assistant professor of mechanical engineering 1900–1909, and professor of mechanical engineering since 1909. He is a fellow of the American Academy of Arts and Sciences, and member of the American Society of Mechanical Engineers, and Sigma Xi.

Arthur Edwin Norton, assistant professor of engineering drawing, was born in Portland, Maine, in 1877. He received the degree of Ph.B. from Brown University in 1900; graduate work at Harvard University and M. I. T. On teaching staff of Engineering School at Harvard since 1901; member of American Society of Mechanical Engineers, American Society for Promotion of Engineering Education. Consulting engineer in field of heating and power plants.

Edward Dyer Peters, Gordon McKay professor of metallurgy, was born in Dorchester, Mass., in 1849. He was graduated from the School of Mines at Freiberg, Saxony, in 1869. He was territorial assayer for Colorado in 1872, and in 1898 was vice-president of the American Institute of Mining Engineers. He has been professor of metallurgy at Harvard since 1904. He is author of "Modern Copper Smelting" (15 editions), "Principles of Copper

Smelting, 1907," "Practice of Copper Smelting, 1911," and also of many technical and scientific monographs.

George Sharp Raymer, assistant professor of mining, was born in New York City in 1855. He received his A.B. from Harvard University in 1878, and E.M. from Columbia in 1881. He was engaged as a mining engineer in the West from 1881–1889. In 1889 he was appointed instructor of mining at Harvard, and in 1904 was made assistant professor. He is a member of the American Institute of Mining Engineers and of the Colorado Scientific Society.

Albert Sauveur, professor of metallurgy and metallography, was born from French parentage in Louvain, Belgium, in 1863. He was educated at Âthenée, Brussels, School of Mines, Liége, 1881–6; student at the Massachusetts Institute of Technology, being graduated with the class of 1889, in the department of mining and metallurgy. He was a chemist and metallurgist for various steel companies until 1889, when he became instructor in metallurgy and later assistant professor of metallurgy and metallography. He has been professor of metallurgy at Harvard University since 1905. He was editor of *The Metallographist* from 1898 to 1903, *The Iron and Steel Magazine* from 1903 to 1906. He was a lecturer at the Institute from 1898 to 1903. He is a fellow of the American Academy of Arts and Sciences; a member of the National Institute of Social Sciences, American Institute of Mining Engineers, Iron and Steel Institute, etc. He is author of many publications dealing with metallurgy of iron and steel, metallography, etc.; officer d'Académie (French government) 1909; Elliott Cresson Gold medal, Franklin Institute, 1913.

Henry Lloyd Smyth has been professor in the department of mining and metallurgy at Harvard since 1900. He was born at St. Mary's, Ontario, in 1862. He was graduated from Harvard College in 1883, from the Lawrence Scientific School with the degree of C.E., in 1885. He is a fellow of the Geological Society of America and of the American Academy; member of the Mining and Metallurgical Society of America and of the American Institute of Mining Engineers; joint author of "The Marquette Iron Bearing District, Monograph 28," U. S. Geological Survey; "The Crystal Falls District, Monograph 36," etc.

George Fillmore Swain, Gordon McKay professor of civil engineering, at Harvard since 1909, was born at San Francisco, Cal.,

in 1857; graduated from the Massachusetts Institute of Technology in 1877, studied at the Royal Engineering School, Berlin, Germany, from 1877–1880. Returning to America, he was hydraulic expert of the Tenth Census of the United States from 1880–1884. In 1887 he became engineer of the Massachusetts Railroad Commission, a position which he held until 1914. In 1893 he was appointed a member of the original Subway Commission of the City of Boston, which was succeeded by the Boston Transit Commission, of which he was one of the members. Since 1913 he has been chairman.

Professor Swain has been a member of many commissions for the abolition of grade crossings in Massachusetts, and was a member of the Commission for Revising the Building Laws for the City of Boston.

In 1910 he was engaged by the joint State Board for the valuation of the N.Y., N.H. & H.R.R. Company and his report was embodied in the report of the board. Since then he has made physical valuations of a number of railroads, including the New York Central Railroad and the Chicago Elevated Railroads, together with some smaller lines.

In 1909 he was appointed a member of the National Conservation Commission.

Professor Swain came to the Institute of Technology in 1881 as an instructor. He was Hayward professor of civil engineering, in charge of the department from 1887–1909, and he resigned to become connected with the new Graduate School at Harvard University.

Professor Swain was elected president of the American Society of Civil Engineers in 1913. He was also the second president of the Society for the Promotion of Engineering Education. He is a member of the American Society of Mechanical Engineers, the Canadian Society of Engineers, the Institution of Civil Engineers of Great Britain, the American Railway Bridge and Building Association, the New England Water Works Association, the New England Railroad Club, the Massachusetts Highway Association, the American Society for Testing Materials, the Society of Engineers and Architects in Hanover, Germany, and others, as well as of some purely scientific organizations including the American Academy of Arts and Sciences, and the American Association for the Advancement of Science. Besides the water power volumes published in connection with his work on the Census, he is the

author of a large number of professional papers and reports in the proceedings of various societies, and also of notes on the "Theory of Structures and on Hydraulics," as well as a book on the "Conservation of Water by Storage," which is about to appear.

George Chandler Whipple, Gordon McKay professor of sanitary engineering, was born in New Boston, N. H., in 1866. He received the degree of S.B. from the Massachusetts Institute of Technology in 1889; biologist for the Boston Water Works, later director of Mount Prospect Laboratory, department of water supply, gas and electricity of New York City; since 1904 a member of the firm of Hazen & Whipple, now Hazen, Whipple & Fuller, consulting engineers, New York, and has been professor of sanitary engineering at Harvard University since 1911. Member of the Administrative Board of the School for Health Officers; fellow of the American Academy of Arts and Sciences and the American Association for the Advancement of Science; member of the American Society for Civil Engineers, American Chemical Society, Society of American Bacteriologists, American Public Health Association, American Water Works Association, New England Water Works Association, American Society of Municipal Improvements, Society for the Promotion of Engineering Education, Brooklyn Engineers Club, Colonial Club of Cambridge, Engineers Club of Boston, Harvard Club of Boston, Massachusetts Public Health Council, New York Commission on Building Districts and Restrictions. Author of "Microscopy of Drinking Water," "Value of Pure Water," "Typhoid Fever," and contributor of various articles on sanitary biology, water supply and sewerage.

Charles Henry White, assistant professor of mining and metallurgy, was born in North Carolina in 1865. He was graduated from the University of North Carolina with the degree of S.B., '94. He received the degree of S.B from Harvard in 1897, and of A.M. in 1900. He was instructor in geology in the University of Tennessee from 1895–1896, instructor in mining and metallurgy from 1899–1905, and since that time he has been assistant professor of mining and metallurgy at Harvard University. He is a member of the American Institute of Mining Engineers, American Chemical Society, Phi Beta Kappa, S.R. He has been a contributor to many scientific journals. He is the author of "Methods in Metallurgical Analysis" to be published this month by D. Van Nostrand Co.

THE DECEMBER COUNCIL MEETING

An alumni library of records considered—Progress on the New buildings described and illustrated by lantern slides

The thirty-eighth meeting of the Council was held at the Engineers Club, Boston, December 28, fifty-one being present.

Charles F. Lawton, '77, of New Bedford, told of the arrangements which have been made for a combination dinner of the Technology and Harvard men at New Bedford which will be held January 29. President Maclaurin will be one of the speakers. President Whiting announced that although in the case of New Bedford the Tech men there had taken the initiative, in New York the Harvard Engineering Society had invited many of the members of the Technology Club of New York to a dinner which is to be held on January 16, at which President Lowell of Harvard, President Maclaurin of the Institute, and Mr. Whiting, president of the Alumni Association, will be speakers.

In accordance with the provision for the appointment of a special nominating committee, the president named Messrs. Lawrence Allen, '07, Carl Gram, '09, and Henry J. Horn, '88.

The next matter presented was that of an alumni library of records. Mr Whiting outlined the plan and scope of such a library and stated that T. E. Sears, '03, had been considering the question and had written a letter giving his ideas on the matter. In effect Mr. Sears stated that the library might consist of photographs, lantern slides, voice records and moving pictures. It might not be practical to devote a large appropriation at this time, but it seems advisable that some steps be taken towards the collection of important records which are available now but will not be at a later date.

His first suggestion was that photographs and voice records be taken of the older members of the Faculty. It was also suggested that a record be made of an address made by President Maclaurin, record of a Faculty meeting, special talks on appropriate subjects by a number of the professors—the idea being to use these at a later date at class reunions, dinners and similar gatherings. It was also suggested that each year records be made of selections by the musical clubs.

Although moving pictures are expensive to make, Mr. Sears thought that it would be well to have one taken between recitation hours, of the Rogers steps with the President, prominent professors, officers, well-known Institute men, as well as students, passing in and out. These records should be kept in a fireproof location and, as far as possible, duplicates made for use, the originals being in charge of a custodian. He suggested that a committee be appointed to work out this problem more thoroughly.

Motion was made and carried that a committee of three be appointed by the chair to consider this question and report to the Council.

The construction and equipment of the New Technology buildings was the next subject for consideration. Mr. Bosworth, '89, architect of the New Technology buildings, outlined the architectural problems, illustrating his talk with lantern slides. The more important features of the engineering work were then touched upon by Mr. Bushnell, vice-president of the Stone & Webster Engineering Corporation, who showed, by means of slides, the various processes of the work, giving an immense amount of interesting information.

Mr. Harry Gay, equipment engineer of the Stone & Webster Engineering Corporation, described the equipment of the new buildings. D. W. Robinson, '92, president of the Stone & Webster Engineering Corporation, supplemented the remarks of the previous speakers.

President Whiting then introduced Professor Ralph Adams Cram, the recently appointed head of the department of architecture. He spoke briefly of the very satisfactory conditions in the department and expressed his high appreciation of his appointment as a member of the Faculty of the Institute.

Infra-red Research

At the recent meeting of the Rumford Committee of the American Academy an appropriation was made for the purchase of a motor generator for the academy, the same to be loaned to Dr. H. P. Hollnagel, '06, of the Institute, for his research on the extreme infra-red portion of the spectrum. The appropriation is $300.

PRESIDENT MACLAURIN'S REPORT

A résumé of the record of the year at Technology—Problems for the future discussed

The President's annual message, always an interesting document, is particularly so this year, because it records a strong degree of advancement along general lines at a period of the Institute's history when we are looking forward to greater physical development in the new buildings in Cambridge.

In the first part of the message, the President reports the changes in the Corporation and Faculty, speaking with the greatest feeling of the deaths of William Endicott, Eben S. Draper and Lucius Tuttle, former members of the Corporation. He also speaks of the new life members as well as the term members of the Corporation. He takes up the changes in the teaching staff, paying high tributes to Professor Robert H. Richards, who has been made professor emeritus and to others who have left us. The next subject discussed is that of the students, and from this point we give the President's report in full as follows:

The reports of the Dean and the registrar contain, as usual, interesting statements concerning the students—their number, origin, distribution in the various courses, their health, character and social power. The registrar presents some interesting and novel statistics with reference to the relative standing of the students. Their number, on November 1st, last, was eighteen hundred sixteen. This is a gain of one hundred thirty-one over that of the corresponding date of last year which was then the largest in the history of the Institute. It is interesting to note that more than one-third of the entire student body has been a year or more at some college before entering the Institute, and very nearly one-sixth are college graduates. The Institute continues to draw students from all parts of the Union and from abroad. The largest increase is from the North Atlantic group of states, with Massachusetts at the head, but there are also increases from the South Central and Western states. In spite of several defections due to the war, the number of foreign students is larger than before, the biggest group from any one country being forty-six from

China. The Dean remarks on the good standing in scholarship of these foreign students as a whole, and of the readiness and skill of the Chinese in participating in the social life of the students. The general character of the student body is excellent. The Institute has always been singularly free from difficulties as to discipline, owing to the earnestness of purpose of its students and the professional spirit that pervades it. A very large proportion of its young graduates continue to make a good impression on entering into practical life, as is indicated by the following extract from a recent letter written by the officer in charge of an important undertaking to the head of one of the Institute's departments: "Your men of whom (as you will see from my report) we have quite a delegation, are the very backbone of the work, all doing excellent work and all unusually pleasant associates."

Some Events of the Year.

The most important work of the Institute goes on quietly within its classrooms and laboratories. This work has been carried on as usual with zeal on the part of the Faculty. The reports appended hereto from the heads of the various departments will direct your attention to some of the changes that have been made during the year. The work of research goes forward hand in hand with that of teaching. The publication within the year of two valuable text-books and fifteen papers by the small department of geology is an example of the intellectual activity of the instructing staff, and gives much evidence that the spirit of investigation is working powerfully within the Faculty. The various research departments —the Research Laboratory of Physical Chemistry, of Applied Chemistry, of Sanitary Engineering, of Electrical Engineering, and the Hawaiian Volcano Observatory continue to do excellent work in advancing the bounds of knowledge and stimulating research amongst students and teachers alike. The work of the Research Laboratory of Electrical Engineering, now being directed with so much zeal and ability by Professor Kennelly, is referred to at some length in the report of the head of the department. That work has a special significance, not only on account of its intrinsic value, but because of the nature of its support. It is being maintained by contributions from a few great corporations and some private individuals. It is most encouraging to have such evidence of the recognition on the part of business men that the spirit of investigation must be stimulated within our schools of

applied science if industry is to reap the full benefit from the maintenance of such schools. During the year a temporary structure has been erected as a research laboratory of aërodynamics. In this a wind tunnel has been installed with the important adjunct of an aërodynamic balance designed to measure accurately the forces which currents of air exert on various surfaces and machines. The National Physical Laboratory of England most generously placed all its resources at the disposal of the Institute in coöperating with our department of naval architecture in the design of this novel instrument. With the equipment installed, researches are being carried on under the skilful direction of Assistant Naval Constructor Hunsaker, a graduate of the Insititute detailed for this service by the Department of the Navy. For many years the Institute has rendered an important public service by training all those graduates from Annapolis who are destined to enter the United States Corps of Naval Constructors. It is now doing the best that it can with the resources at its disposal to render a similar service to the Nation in training men to design aëroplanes and airships. The striking object lesson that Europe is now affording of the vital importance of aërial service as an adjunct to naval and military forces can scarcely fail to impress the intelligence of this Nation.

The most conspicuous events of the year have been the progress that has been made in erecting the new buildings of the Institute and the agreement between the Institute and Harvard University for coöperation in the field of engineering. At the time of my last report much work of a preliminary nature had been done on the buildings, especially in laying the necessary foundations and raising the site to the level that was deemed desirable. By this time, however, building operations have progressed so far that it is now possible to obtain a fair idea of the scope of the work, although it is yet somewhat too early to visualize accurately the great group of buildings that we hope to occupy in the fall of 1916. The work of planning these buildings and their equipment has imposed a very heavy load on the members of the Faculty whose readiness to give time and thought to the solution of the Institute's problems is beyond all praise.

The text of the agreement with Harvard is appended to this report.* That agreement was so carefully considered by the mem-

*See President's Report, 1915.

bers of your Corporation that it can scarcely be necessary to discuss it here at any length. It represents the joint effort of two independent institutions to place the resources of both at the service of students of engineering. As soon as the possibility of coöperation between the two institutions was made clear by the readiness of each to make everything subservient to the desire to serve the community, the various possibilities were considered. It soon became evident that there could be no effective coöperation on any large scale if each institution maintained separate laboratories and independent staffs. A few students might be moved from one place to another, but any extensive interchange of this kind would be impracticable. The only satisfactory method of overcoming the difficulties was that which has been adopted. The Institute is spending millions of dollars in the erection of laboratories specially well adapted for the needs of students of engineering. The University agrees to use these laboratories for the training of men who are candidates for its degrees. This important step having been taken, the next step was to avoid as far as possible the difficulties of dual control. To this end the engineering staff of Harvard and the existing staff of the Institute is merged in a single faculty and the executive control of all the work placed in the hands of one officer—the President of the Institute. At the same time the independence of each institution is safe-guarded by the provision that each corporation is free to lay down such regulations as it deems expedient with regard to courses leading to its degrees and each retains absolute control of every item of the expenditure that it incurs. The agreement does not go into full effect until the Institute is ready to occupy its new buildings. Meanwhile, it has been arranged that the two institutions should work in as close alliance as possible and each aid the other to the utmost of its power in carrying on the work of teaching and investigation in the field of engineering. During the present year, the professors of engineering at Harvard are taking part in the regular work of the Institute's Faculty and it has been most gratifying to observe how smoothly the joint effort is working and how easily difficulties have been overcome that to the vision of some seemed in prospect to be formidable. The readiness of all concerned to make the joint effort eminently successful is a tribute to the breadth of spirit of the teaching profession. I do not think that there can now be the slightest doubt that the arrangement is workable, and that immense

benefit will accrue to the community from the combination of effort on which we have agreed.

An important event of the year was the decision of the Supreme Court in May last with reference to the Institute's title to its property in Boylston street. That title is now thoroughly established and the nature and extent of the encumbrances clearly defined, so that your Corporation stands on firm ground in making plans for the future use of this land or the buildings erected thereon.

In recent reports to the Corporation, I have discussed the question of establishing a course in engineering administration. This question was most carefully considered by a committee of the Alumni Council which presented a valuable report to the Executive Committee of the Corporation. The matter was referred to the Faculty which recommended the establishment of a course specially designed to train men who expect to enter positions concerned with the management or administration of manufacturing, construction, or transportation enterprises that demand a knowledge of scientific and engineering principles. In accordance with the recommendations of the Faculty a course in engineering administration was established during the year. The course presents three options, a civil engineering option, a mechanical and electrical engineering option and a chemical engineering option. Each option combines with instruction in general engineering, studies in the methods, economics, and law of business. Approximately, one-fourth of the total time of the curriculum is given to business subjects and these are primarily chosen so as to train students to analyze commercial and industrial problems; the remaining three-fourths of the time is devoted to general studies and to engineering. This new course was opened, to second-year students only, at the beginning of the present academic year. It will be open to third-year students next year and to fourth-year students in the following year, so that it will be fully established when the Institute enters into its new buildings. It is interesting to observe that the number of students in the second year who have elected this course is fifty-seven. If this number be maintained in successive years the new course will soon be almost on a par as regards numbers with many of the older courses. Its establishment would, therefore, seem to be justified as filling a distinct want. Something of its larger possibilities may be indicated by the brilliant achievements of the Institute's alumni who have added

sound engineering knowledge to skill in the handling of business problems.

Some Problems of the Future.

One of the larger problems of the future has been presented in an interesting form by the report made during the year by the committee of the Alumni Association dealing with the problem of organized coöperation between the Institute and the Commonwealth. The report itself is accessible to all who may be interested and I commend it to the attention of those of your Corporation who may care to examine the collection of exhibits appended to the report and the suggestions in the report itself made for the solution of a great problem. The primary function of the Institute is now and probably always will be to train individuals to serve society by practising their professions and practising them well. For that purpose it has set up an elaborate organization and attracted to its instructing staff a group of professors and instructors numbering at present nearly three hundred. The first duty of most of these instructors is to teach the students in attendance on their courses. They must, however, do more than teach. They must promote the spirit of learning and research and, if possible, extend the bounds of knowledge. By written and by spoken word they must stimulate others so as to make them better citizens, broader in their interests and sympathies, freer from primitive prejudices and passions, better informed as to the teachings of experience. This, in itself, is a great task. Ought those engaged in it to be encouraged to attempt anything more? Can they, without impairing their efficiency in the great service to which I have referred, do anything more directly by way of helping towards the solution of the countless problems presented in the administration of cities and states? To those who would answer this question affirmatively, it seems wise to associate our professors with public work wherever practicable if for no other reason than to give them more intimate knowledge and more vital interest concerning the problems that are actually presented. Unless they have this knowledge and this interest, they cannot be expected to train others successfully to attack these problems. Apart from this, it is recognized that the Faculty of the Institute contains a number of specialists of the highest rank in their own field. If they could be associated in any way with the work of state commissions, municipal boards, committees and the like, they might render in-

valuable service to the community, their coöperation being especially helpful in the unbiased, disinterested determination of facts which precedes or ought to precede action in the various activities of states and cities. It is common knowledge, of course, that much has already been done in this direction through the energy and public spirit of individual teachers. The question raised in the report to which I have referred is whether this service might not be extended and made more effective by organized coöperation between the Institute and representatives of the state and the cities within it. The report recommends action to increase and regularize the service of members of the Faculty on State boards and commissions either as members or in an advisory capacity. It recommends further that the laboratories of the Institute should be placed at the service of the State under appropriate conditions which will safeguard the educational purpose of the Institute and the administrative needs of the State. It recommends further that there be established a bureau of technical information which shall furnish to the State, and to the public, advice that may be obtained without substantial expense either by supplying ordinary scientific information or indicating the line of inquiry to be pursued. It looks forward to a system of coöperation along the lines indicated not only between the Institute and the State, but between the State and the various other educational institutions within the Commonwealth, and concludes: "The various institutions of the State thus harnessed to the State's interest would constitute a great State university. Geographically diversified, possessing the momentum of valuable traditions, the strength of long years of experience, their stability, their equipment, their moral influence through their great alumni bodies, all render these institutions units which if assembled by a wise state policy would form that coördinated system of educational facilities which in its broadest sense is a university." This suggests a problem worthy of the most serious consideration by your Corporation.

If we take a long view of the prospects of the Institute, it will, I think, appear that those prospects are extremely bright. Its apparent difficulties are not in the distance but within the next few years. These difficulties, as has so often been the case in its history, are mainly financial, and it will need not only the general good-will of the community, but the active coöperation of all the members of your Corporation and of the other friends of the

Institute to overcome these difficulties successfully. The cost of preparing the land, and of erecting and equipping the buildings now being constructed is largely in excess of the money that has been given for these purposes. The largest subscriptions promised have been paid, but the serious business depression overhanging the country has caused a postponement of many gifts that would otherwise have been secured. Half a million dollars will be needed for the equipment of the buildings alone, and as yet very little has been given for this purpose. To accentuate the difficulty the stagnation in real estate business may be expected to postpone the disposition of the Institute's Trinity Place property, although this property has been counted amongst our available assets when considering the financial problems involved in erecting the buildings now under construction. Further, it must be remembered that even when the present buildings are completed and paid for, larger expenditures will have to be incurred before we are in a position to complete the plans that were made when it was decided to move to a new site. One of the reasons for moving was that it was impracticable to provide in the neighborhood of the present site adequate facilities for the life of the students outside the lecture rooms and laboratories. An admirable beginning has been made in this direction by the provision of a first-class athletic field and running track on the new site. This is a very great improvement indeed, for the conditions under which health-giving exercises have been carried on at the Institute have hitherto been far from satisfactory. The athletic field in Brookline was an excellent one in many respects, but its location so far from the Institute enormously diminished its practical usefulness. Now, with one of the best athletic fields in the country right at hand, students will be able to take part far more easily than before in those exercises which do so much to improve their physical and moral condition. The athletic policy at the Institute is guided by a committee of the alumni—a committee that has been singularly successful in avoiding the dangers of college athletics and that has done admirable work for the students in spite of the difficulties with which it has had to contend. It aims to encourage sports in which as large a proportion of the students as possible will participate, and seeks to make athletics a health-giving exercise rather than an absorbing business. It should be greatly assisted in its labors by the provision that has been made for a new track, but a gymnasium is an

almost indispensable adjunct, and as yet there is no money for its erection.

When the Institute establishes itself in Cambridge, there will be a community of nearly twenty five hundred students, instructors and working staff within its walls. It will be highly inconvenient for most of these people if they cannot get at least a mid-day meal on or near the premises. One of the urgent needs will be to provide suitable Commons for this purpose. The advantage of having some center of social life amongst the students has been recognized for long and some provision has been made for such a center in the Walker Memorial. A considerable amount of money has been subscribed in past years for this purpose, but the total is not yet sufficient to erect and equip a building large enough to meet the needs and worthy of the great President whose services to the Institute it seeks to commemorate. A large portion of the tract fronting on the Charles River has been set aside as a site for dormitories, the lack of which is one of the most serious defects of the Institute. The site is an admirable one for the purpose—few who have not actually visited it appreciate how beautiful is its outlook —and there is a splendid opportunity of improving the Charles River Basin by erecting a suitable group of buildings along the waterfront. This should appeal to the public spirit of citizens in Boston and Cambridge, but as yet no money for the purpose is available. The financial needs that I have enumerated are nearly all of a special character arising from the needs of a great institution seeking to establish itself with adequate facilities in a new location. Behind these, however, is the ever-present problem of providing larger endowment for the growing needs of an institution occupying a position of leadership in the great field of applied science. The general endowment of the Institute is far too small and a very large part of it is restricted for scholarship and other aid, which, however beneficial to the recipient of that aid, does not help the Institute directly to carry on its great work.

The weakness in Europe due to the war gives the Institute a greater responsibility and a greater opportunity. By its past achievements it has earned the respect of the community in which it is placed and of the country at large. The happenings of recent years have added greatly to its stability and to its prestige. Doubtless it will continue to attract able men in large numbers from all parts of the Union and from beyond its borders. Indeed, one of

its serious problems will be the problem of numbers—how wisely to keep within reasonable limits. Only a few years ago when the serious discussion of plans for new buildings began, the Institute had fifteen hundred students, and it was thought that by adding one-third of that number and planning for two thousand students, sufficient provision would be made for some years to come. The new buildings were accordingly designed to accommodate two thousand students, but as there are over eighteen hundred now, it is almost certain that we shall have two thousand by the time that we are ready to occupy the new site. Apparently, we shall have to limit our numbers in some way and the obvious way to do this will be by the raising of standards and the more rigorous elimination of those who do not live up to those standards. If, in alliance with Harvard, we can secure a large share of the best students and the best professors everything is open to us provided we are properly supported. There is a rich field to be tilled and enormous opportunities for service to the community. One of the most conspicuous of these is the adequate training of the most advanced students and the conduct of research into the problems of industry. Of course, something has already been done in this direction, and some support has been obtained from corporations like the Telephone Company and from private individuals, but we need greatly more if we are to rise to the level of the opportunity that is presented and take our fair share in improving the industrial condition of the country.

Trip of Musical Clubs

The Combined Musical Clubs of the Institute of Technology have completed arrangements to give concerts during the week's vacation following the mid-year examinations. The clubs will appear in Montclair, N. J., Philadelphia, Pa., Washington, Pa., Butler, Pa., Rochester, N. Y., and Springfield, Mass.

The Technology alumni and friends of the club members in these various cities are making extensive preparations for entertaining the members of the Musical Clubs, and it is expected that the trip will be a very successful one. One of the novel features of these concerts will be selections by the Hawaiian Quartet, composed of four performers who play Hawaiian instruments and sing Hawaiian airs. There are forty men in the Glee, Mandolin and Banjo Club.

WHEN WE WERE FRESHMEN

Reminiscences of serious or humorous experiences of alumni during their student days at the Institute

I am asked to write for the REVIEW something in regard to our experiences as students in the early days of the Institute when the first new building on the Back Bay was used for lectures and recitations. How big and grand it was! And our little band of students made a small showing in that imposing structure.

There was nothing out beyond us then but a desert waste of newly-made land and a great expanse of water extending over to the highlands of Brookline.

Our athletic field was made up of vacant house lots, sadly circumscribed by embankments which were the beginnings of closely intersecting streets. On these grounds we had our game contests, and there we played, for the most part, a very modified and limited form of baseball. There were not enough of us to supply full nines, for we could muster only about seven men all told, and so a large proportion of those in the games took positions on both sides in every contest.

As for other sports, we were too few in numbers for football and, in fact, the game at that time had nowhere the great prestige it now enjoys in schools and colleges.

Military drill was then obligatory and, with a hired drillmaster, we gathered every Saturday the entire student body in a little, old, stuffy hall downtown and went through marching evolutions in a perfunctory way. After many months of these performances, some sorry looking muskets were procured, and then, in the flush of pride, we were taken out one day on the Common to be shown to a wondering public. There, we were put through our paces and we marched and countermarched and formed a wonderful hollow square, together with other brilliant maneuvers. The spectators, however, made up mostly of small boys, were not favorably impressed. They evidently thought there were not enough of us to play soldiers properly, and so they expressed such strong disapprobation that our thoroughly humbled drillmaster was glad to march us quickly back to the hall.

Once too, we went to the wilds of suburban Chelsea for a

grand target shoot, although we had never been instructed in the use of ammunition previously. How the markers escaped with their lives in noting our hits and misses is to this day a mystery and, but for the fact that there was a particularly high and substantial hill at the end of the range, the number of killed and wounded among the innocent and unoffending inhabitants of Chelsea would have exceeded by far the present-day record of Naco, Sonora and other points along the Mexican boundary line where battles are now going on.

At last there came a time when I was forced to sever my connection with the military body, having been duly excused by the Faculty from participation in weekly drill. Our valiant commander was shocked beyond measure when the announcement was made to him. He entreated me to reconsider my determination and promised rapid and high promotion from the ranks if I would only stay so as not to break up the regiment.

How could he possibly manage to carry through his marching evolutions, he asked. With such a large proportion of the entire available military force gone, the regiment's efficiency and imposing appearance would be seriously impaired. It would be a severe blow to the army. But I steadfastly declined all these flattering offers and insisted that nothing short of a commission as brigadier general would tempt me to reconsider my determination.

In contrast to the lecture rooms of the present day, those used in our time were absolutely without ventilation except such as was given by opening windows and doors, and the chemical laboratories were filled with stifling odors at times.

In connection with our instruction in chemistry, it is pleasant to recall the custodian of the laboratories and the storekeeper, Mrs. Stinson, a gentle and patient woman whose heart and soul were in her work. She was always helpful and the students held her in great respect and esteem.

And now a word as to our teachers. Professor Charles W. Eliot was with us in those early days before he became president of that other great institution where his life work found better expression in a wider field of influence and usefulness. On the Institute's staff, next to President Rogers, I recall most clearly Professor Runkle who was later promoted to the presidency. He was a wonderful mathematician and an excellent teacher who led us through the difficulties of analytics and the calculus most successfully.

And Professor Osborne was a brilliant and successful teacher whose memory is dear to us. His demonstrations were always marvels of clearness and simplicity.

But what shall be said of Professor Watson? He was a man whom we esteemed and we had for him genuine regard. He seemed so splendid when you saw him on the street, always so gorgeously well-dressed. He wore clothes made in the latest Parisian style, and, with the rest, a tall beaver hat of bright, warm pearl color with a long, heavy, lustrous nap, carefully brushed so as to display its quality by one artfully disposed little "cow-lick." Sadly, I recall one occasion when three wet, dripping umbrellas found their way into this hat, accidentally, of course, over in a remote dark corner of the lecture room where it had been carefully placed by the owner while he was preparing for a lecture to our class.

If we met the professor on the street, he would greet us cordially and say, with a strange mixture of boldness and alternating timidity, "I have some very interesting things to show to the class this afternoon and I hope you will all be present at the lecture. You will come, will you not? I am sure you will be interested.—O yes!" And then in the classroom he would have the blackboard covered with figures and on his tables a collection of models from Paris to illustrate the mathematical calculations. Taking a model in one hand and a chalk crayon in the other, he would turn to the class and make a brave beginning. "This, gentlemen, is a hyperboloid of revolution of two nappes. The red silken threads show one set of elements and the blue threads another. The formulae expressing the development or rather the generation of these surfaces are here on the blackboard and you can easily follow their derivation."

Then there was Professor Henck, a somewhat austere and very learned man, who was our professor of civil engineering. He was the author of a little "Field Book for Railroad Engineers," and a very creditable and valuable work it was.

I have told you how few we were in numbers, but there was manifest even in those early days, a spirit of enthusiasm, a love for hard work, an earnestness, a scholarly strength and ambition that have characterized the students of "Tech" from the very beginning of its existence.

William E. Hoyt, '68,
Consulting engineer and special engineer, New York Central Railroad.

An Efficient Health Council

The Massachusetts Institute of Technology feels well satisfied with the appointments made by Governor Walsh to membership in the Health Council of the State, a body created by the Act reorganizing the State Board of Health. Quite recently Tech and Harvard or Harvard and Tech, whichever way you prefer to state it, set out reorganizing the methods of preparing men for effective work as sanitary officials. The result was the new Coöperative School for Health Officers, which has for its administrative board, William T. Sedgwick, Sc.D., chairman; Milton J. Rosenau, M.D., director, and George C. Whipple, S.B., secretary. This is just the combination that Governor Walsh has selected for half the Council, a board that puts Massachusetts in the same advanced rank as the strongest educational institutions in the country. Sedgwick, whose authority is sought by municipality and government in sanitary problems the country over; Rosenau, an authority on milk and infectious disease, whose fame is not bounded by the limits of the Continent, and Whipple, a member of the engineering firm that is one of the most famous in the country when it is a question of water supply or disposal of the drainage. The selection of these men by the governor is a practical example of what President Maclaurin has been advocating so heartily, the coöperation between colleges and the state, and the trial run on this principle begins most auspiciously.

Professor Sedgwick Received Honors

Professor William T. Sedgwick had honors thrust upon him when he was elected president for the coming year of the American Public Health Association. The association was near the close of its forty-second annual meeting which was this year in Jacksonville, the retiring president was Dr. William C. Woodward, health officer of Washington, D. C., and Dr. Sedgwick was elected without his knowledge, certainly a case of the office seeking the man. Eighteen Tech alumni, including health officers and bacteriologists representing states from Massachusetts to Washington and Texas, one of them a woman, Miss Wade, formerly of the laboratory of the Boston Board of Health, joined in the telegram of announcement.

NEWS OF ALUMNI ASSOCIATIONS

TECHNOLOGY CLUB OF PHILADELPHIA.—At a recent meeting of the Technology Club of Philadelphia officers for the year were elected as follows: President, Richard Waterman, '92; vice-president, C. F. Willard, '01; secretary-treasurer, George C. Lees, '08. The executive committee includes the president, vice-president and secretary, and W. H. Blakeman, '05; E. E. Pierce, '99; P. E. Tillson, '06; and C. P. Wetherbee, '13.—*George C. Lees, '08, Secretary-treasurer, 826 So. Alden Street, Philadelphia, Pa.*

ST. LOUIS SOCIETY OF THE M. I. T.—Mr. Morris Knowles, '91, of Pittsburgh, president of the Technology Clubs Associated, addressed the society at a midday lunch at Lippe's Restaurant on December 15. Mr. Knowles filled us full of the coming convention of alumni at Pittsburgh, February 19–20, 1915. The Pittsburgh Society is financed largely by "guarantors," who make it possible for young alumni on small salaries to participate in all doings of the society, and apparently some such plan has been adopted for the coming convention to reduce the cost of attending from a distance. The program as outlined by Mr. Knowles gives promise of a lively time for father, while mother and the kiddies are not forgotten by the committee.

B. F. Thomas, '13, was elected assistant secretary, filling the place left vacant by the removal of C. M. Emerson, '06, to New York.—*A. M. Holcombe, '04, Secretary-treasurer, 510 Pine Street, St. Louis, Mo.*

NORTHWESTERN ASSOCIATION M. I. T.—The new officers nominated for the coming year are for president, Kenneth Lockett, '02; for vice-president, H. M. Montgomery, S. M. A., '79; secretary-treasurer, George B. Jones, '05; for directors: P. W. Moore, '01; J. M. Frank, '07; and H. S. Pardee, '09.

The election of officers will take place at a special meeting to be held January 12.

A change of official luncheon headquarters has been made from the Grand Pacific Hotel to the New Morrison Hotel. The Alumni Secretaries Association of Chicago has made arrangements whereby all colleges holding weekly luncheons will hold them on the balcony

floor of Hotel Morrison, and in addition, there is a lunch there open to all college men every day.

Owing to a conflict with the regular meetings of the Electric Club and the Engineers Club, the board of directors has selected Tuesday as the official luncheon day.—*George B. Jones, '05, Secretary, 1444 Monadnock Building, Chicago, Ill.*

Southwestern Association—Our association had its annual dinner at the Kupper Hotel on Saturday evening, November 28, and while we were few in numbers we were large in voice and representation and enjoyed the dinner and an hour's singing of Tech songs. There were many regrets expressed at the lack of things accomplished this year in boosting Tech but these were soon forgotten in the promises for the ensuing year. We would like very much to know from the various association secretaries or general secretary as to when any of our big Tech men were expecting to travel this way and we would like to meet them and possibly entertain for them, showing them our city and "Kansas City Spirit."

The officers elected for the coming year are G. M. Holbrook, '00, president; Frank Cushman, Jr., '00., vice-president, and Hermann C. Henrici, '06, secretary and treasurer.

New committees were appointed as membership committee and publicity committee.

We notice that we stated above that we should like to know when the big Tech men were coming this way, but we want it generally known that all Tech men will be welcomed and none should go through Kansas City without giving us a chance to meet him or them.—*Herman C. Henrici, '06, Secretary-Treasurer, 715 Reserve Bank Bldg., Kansas City, Mo.*

Technology Club of Rhode Island.—The club held its first meeting of the winter season at the Hotel Dorrance Tuesday evening, December 15, with a large number of members present. The speaker of the evening was E. V. French, '89, vice president and engineer of the Arkwright Mutual Fire Insurance Company of Boston, who gave a talk on "The Salem Fire."

Zenas W. Bliss, '89, vice president of the club, introduced the speaker as a classmate and an authority on fire protection. Mr. French, who was an eyewitness of the conflagration, gave a graphic description of the progress and the method of combating the fire,

both from the technical and layman's standpoint. Various slides and diagrams were shown to illustrate the points brought out, Mr. French summarizing the many lessons to be learned and touching briefly upon the effects on the building laws and the best types of modern construction.

A supper and informal social hour followed the lecture.—*Clarence L. Hussey*, '08, *Secretary, Fruit Hill, Providence, R. I.*

On to Pittsburgh

February 19–20

"The latch string is out"

Call up the secretary of your local association and let him know that you are going so that transportation arrangements can be made for your delegation

TECH MEN IN THE PUBLIC EYE

F. H. NEWELL, '85, formerly director of the United States Reclamation Service, has been made its consulting engineer, the positions of chief engineer and director having been consolidated. Mr. Newell's record in connection with the inception and the carrying on of the work has been one of wonderful achievement notwithstanding the fact that for a large part of the time the advancement of the service was handicapped by political considerations. Throughout these controversies Mr. Newell had been unitedly backed by the engineering profession and the engineering press.

C. H. WOODBURY, '86, noted as a painter of marine subjects, has been honored with the second prize ($1,500 and silver medal) for his painting entitled "The Rainbow," at the fifth exhibition of contemporary oil paintings at the Corcoran Art Gallery, New York City.

Mr. Woodbury has won prizes at the Atlanta exposition, the Nashville exposition, Mechanics Association exhibits, the Worcester Art Museum, and the Boston Art Club. He conducts large summer classes at Ogunquit, Maine, where he has had a studio about seventeen years.

While a student at the Institute his painting, "Revere Marshes," was purchased by the Boston Art club. He studied with Julien in Paris and there won many medals. One was awarded him for "Rocks and Sea," a notable marine study in oil. His "Mid-Ocean," which was exhibited in Boston several years ago, is now owned by the Berkshire Athenaeum. In August, 1911, the Queen Mother, Margherita of Italy, purchased his "A Tropical Sea."

Mr. Woodbury's work is included in the Carnegie collection and others. He is a member of the Society of American Artists, the New York Water Color Club, the Technology Club and the St. Botolph Club.

HARRY E. LAKE, '11, has been appointed secretary of the fire prevention commission of Boston by Building Commissioner J. A. O'Keefe. Since graduation Mr. Lake has acted as efficiency engineer for the W. H. McElwain Company, has been assistant at the Lowell Observatory, Flagstaff, Arizona, and has been engaged in research engineering work.

MISCELLANEOUS CLIPPINGS

Science and Safety

When we find an address opening with a reference to the appalling inhumanity and waste of the war in Europe, followed by the remark that "we rarely stop to think that an equally disastrous and perhaps even more shameful war is going on in our midst all the time," we are prepared for a reformatory thriller of the first order. But such is not at all the character of the address made by President Maclaurin, of the Massachusetts Institute of Technology, to which we are referring. Speaking before the Boston Safety Society last week, he tried to impress upon his hearers the enormous extent of the suffering and loss caused by avoidable industrial accidents in this country; but, while insisting on the duty of doing everything that can be done to reduce the evil, he dwelt particularly upon one aspect of the question which is too generally lost sight of. This is the cardinal importance of what can be accomplished by voluntary effort, if sufficiently stimulated by a knowledge of its possibilities. Dr. Maclaurin speaks of instances in which corporations have reduced accidents to their workmen by one third in a single year, by two thirds in ten years, "and some," he says, "have very nearly eliminated them altogether." But it is not wholly, nor even chiefly, by the employers that the lesson needs to be learned; it is the workmen themselves, above all, according to Dr. Maclaurin, who must learn to mend their ways. In Germany, he says, statistics show that "there are about twice as many accidents that happen through the carelessness of the workmen as through the neglect of proper safeguards on the part of the employer"; and in this country he thinks it probable "that the proportion to be ascribed to the workmen is even larger than it is abroad."—*The Nation.*

Army Officer at Tech

It is understood on the Pacific Coast that Capt. Virginius E. Clark, a first lieutenant in the Coast Artillery, who holds the rank of captain while detailed as a junior military aviator in the aviation section of the Signal Corps, will be assigned to superintend the construction of all Government military aëroplanes. This detail will be made, it is said, as soon as he completes a special course in aërodynamical engineering at the Massachusetts Institute of Technology. Captain Clark, who was born in Pennsylvania on February 27, 1886, was appointed a cadet at the Naval Academy at Annapolis in 1903, graduating in 1907. After two years of duty on board ship, he decided he would prefer army life, and on October 17, 1909, was appointed a second lieutenant in the Coast Artillery. He was first stationed on the Eastern coast, and later assisted in the construction of the Pearl Harbor coast defences, as he had marked ability as an engineer.

He took up military aviation, and was detailed to attend the aviation school of the Signal Corps at San Diego. His work on the engineering end of aëroplane work was largely responsible for his receiving the assignment to the Massachusetts Institute of Technology.—*Evening Post*, New York.

Tech and the State

The Governor's reconstruction of the state's health bureau, now the Public Health Council, is practically recognition and drafting of the Harvard and Tech School for Health. Professors Whipple, Sedgwick and Rosenau are essentially the managing board of that institution, and they are big men—none more admirably equipped by training, association and inclination could have been found if the country had been combed. Here is a reconstruction that meets the needs of growing problems and complicated demands. The old State Board of Health had brought desirable fame to the state. In upsetting it there was considerable fear that harm would result. Those fears are quashed by the Governor's appointments to the Public Health Council. It is a council of experts.—*Boston Evening Record.*

The Constructive Spirit

Appointment of Harvard and Tech professors to help Cambridge, in an advisory capacity in solving city problems, is recognition by the city and those institutions of the correct constructive spirit, and application of the finest facilities to practical, comprehensive purposes. Free scholarships for Cambridge residents, prestige to the city by their presence—these do not comprise the whole duty or the whole opportunity involved. The possibility of wider public utilization of Harvard and Tech advice in public affairs has been discussed often enough, but usually with regard to state affairs. If Mayor Good can develop a closer coöperation and more constant association of the institutions and the city the result will be mutually advantageous.—*Boston Evening Record.*

Tech Scholarships

In the Massachusetts Institute of Technology one student out of every five and a half is aided by a scholarship. Thirteen per cent. of the scholarships in 1912–13 were granted to freshmen. It has occasionally been questioned whether it is prudent to give such aid to first-year students. The committee says that there is some risk in selecting students early in their course, but examination of the records show that the judgment of the committee, on the whole, has not been misplaced. Of the seventeen freshmen in the class of 1911 who received a grant, twelve of the awards for the second term were made subject to good records to be secured during the first term. Eleven of these students fulfilled the conditions.—*Journal of Education.*

A Notable Contract

One of the most important jobs of stone construction that has recently come before the public is that of the new group of buildings for the Massachusetts Institute of Technology, to be erected along the banks of the Charles River, at Cambridge, Mass. The contract for all of the cut stone was awarded to the Shea & Donnelly Company, of Lynn, Mass., and Bedford, Ind., and is one of the largest ever awarded. The stone will be furnished by the Indiana Quarries Company, at Bedford, and about one thousand carloads will be required. The Shea & Donnelly Company is now working on the contract, and will complete it by May 1, 1915.—*Dayton* (Ohio) *Journal.*

A New Option?

Members of the Baltimore Conference Itinerants' Club will hold their fall meeting at Wolbrook Methodist Episcopal Church on Monday and Tuesday. Dr. Marcus D. Buell, professor of Greek and New Testament exegesis at the Boston University School of Technology, will give four expository lectures on Galatians and Philemon. Two lectures will be given on Monday, at 4 and 8 o'clock, and two on Tuesday, at 11 and 4 o'clock.—*Evening Sun*, Baltimore.

A Close Prediction

Twelve years ago the volcano Mokuaweoweo in Hawaii gave a spouting performance. Last spring Professor Jaggar of the Massachusetts Institute of Technology predicted that the next eruption of that volcano would occur next February. The cable announces that the crater is now in action—two months ahead of the time appointed by Professor Jaggar. But, taking one consideration with another, the professor's calculation was remarkably close.—*Buffalo Courier.*

A Wonderful Track

Boston Technology's new athletic field in Cambridge was constructed by Sparrow Robertson, well known as the builder of the fast track at Travers Island, N. Y. In the Tech track he has used cinders mixed with loam instead of clay, and claims that it will be by next spring the fastest track in the country, and will have a 220-yard straightaway, 30 feet wide, the widest in the country.—*Gazette*, Atlantic City, N. J.

The idea back of the appointment of Prof. Charles M. Spofford of Tech and Prof. Charles J. Bullock of Harvard as advisers to the city of Cambridge is said to have originated in Wisconsin, where the State University has long been active in such efforts, to aid the state and municipalities. So far has the practice gone in that state that a college president recently remarked that there was some dispute as to whether the state ran a university or the university the state.—*Boston Advertiser.*

BOOK REVIEWS

FOUNDATIONS OF CHEMISTRY. By A. A. Blanchard, Massachusetts Institute of Technology, and F. B. Wade, Shortridge High School, Indianapolis. pp. 446, 14 x 19 cm.; cloth $1.25. 1914. American Book Company.

Opinions of teachers of chemistry as to what constitutes a satisfactory course for high schools differ so radically that it requires no little courage upon the part of any authors to launch a new text upon the troubled waters of contending views. It is refreshing to find in the new Blanchard and Wade a text avowedly for the purpose of using the subject-matter of chemistry primarily for the teaching of boys and girls, letting any mastery of chemistry as a science, together with discussions of its applications in the various industries, home economics, agriculture, etc., play a subordinate part. The book will find large favor among teachers who seek general educational ends in chemistry rather than specialized features without sacrifice of the fundamentals of the subject as a secondary school study.

The book is exceptionally attractive in binding and typography. The chapters are of a length well suited for teaching ends—a sufficiently complete presentation of each topic in turn but not wearisome for the high school pupil. Excellent summaries, together with questions, follow each section. The absence throughout the first part of the book of formulae and chemical equations leads one to turn to the title page to reassure himself that the book is really a text in chemistry. Chemical expressions follow later when chemical phenomena and their significance demand expression.

The writer wishes to voice the opinion that in larger measure than in the older standard texts the value of the Blanchard and Wade will depend upon the character of the laboratory exercises accompanying it. Independently of its attractive style in the treatment of its topics, not a little of the charm of the book and of its worth as an educational means in the teaching of youth, is the absence from the text of much of the detailed steps of the preparation and properties of long lists of substances of comparatively small teaching worth. At all times it is the large relationships of relatively few substances that are made centers of interest, and the approach to these is through what pupils already know of them from the experiences of life. For instance, studies of combustion lead on to teachings concerning oxygen; and discussions of water of a general nature, and concerned more or less with its physical aspects, precedes the study of hydrogen. There is every reason to believe the transferring to the laboratory in larger measure teachings concerning terms, industrial and technical processes, and discussions of facts of reference, will enable a return to science texts for high school pupils that arouse and establish for life a desire to know more of the subject studied. The Blanchard and Wade Text leads off in this direction, and high school teachers of chemistry will welcome the departure we are sure.

The treatment of chemical theory is sufficiently comprehensive and exceptionally clear and teachable. One draws a long breath of relief at promise of better understanding by pupils of these parts of chemistry.

Whether the year of high school chemistry shall cover the whole text, or, as suggested, but the first twenty-four chapters of the book, the unity of the text and its graduation in the difficulties of treatment of subjects as pupils grow better able to understand chemical theory is a very happy arrangement. Teachers of high school chemistry will find it worth while to give this new book more than the usual consideration. H. B. In *School Science and Mathematics.*

THE VOYAGES OF THE NORSEMEN TO AMERICA. By William Hovgaard, late Commander in the Royal Danish Navy; Professor of Naval Design and Construction in the Massachusetts Institute of Technology. With 83 illustrations and 7 maps. New York: The American-Scandinavian Foundation, 1914. Pp. xxi, 304. $4.

The considerable number of books that have been published on the Norse discoveries in proportion to the scantiness of the original sources of information on the subject might suggest, upon the appearance of a new title, the query whether the ground had not already been so thoroughly cultivated and exhausted as to offer little hope of adding to the harvest. But one does not need to proceed far in Captain Hovgaard's book before becoming convinced that there was room for treatment from a point of view hitherto either neglected or else only inadequately emphasized, the standpoint of the navigator.

Captain Hovgaard, as a former naval officer and a present teacher of naval architecture, is exceptionally equipped to deal with this phase of the problem. It should be added, however, that while Professor Hovgaard may rightly command our acceptance of him as an authoritative exponent of the navigator's presentation of the question, he does not by any means slight the historical and ethnological features of the subject, toward whose elucidation he contributes the results of a careful study and comparison of the investigations of specialists in those fields.

To the general reader the most fascinating portions of this book are probably the summaries and extracts from the Sagas, those folklore tales handed down through generations and centuries by word of mouth, doubtless undergoing in the process many transformations, but none the less possessing an absorbing literary charm and embodying no inconsiderable amount of historical fact. The author has drawn upon the testimony of the Sagas with much skill and effectiveness.

By supplementing the descriptions in the Sagas with a minute study of the coast of Greenland and the Atlantic shores, one is able not only to indicate the possible but also to fix with considerable definiteness the probable landing places and settlements of the Norsemen in the Western hemisphere.

It is interesting to note that the author devotes only seven or eight lines to the one-time strenuously urged thesis of Professor Horsford that the Norsemen located along the Charles river; but on the other hand he marshals his evidence to show that their more likely New England settlement was in the Cape Cod region. It should, nevertheless, be observed that while Captain Hovgaard has his own views respecting most of the mooted points connected with the Norse voyages, he is everywhere eminently fair in presenting all the available data, so that the reader is able to form his own conclusions, which may differ from those of the author.

The mechanical make-up of the book is a fit setting for its scholarly contents. The typographical excellence, the maps and illustrations which very helpfully supplement the text, the extensive bibliography and comprehensive index, all contrib-

ute in their way toward enhancing the value of what is likely to remain for a long time as the most satisfying study of the Norse discovery of the New World to the Old.—Charles F. A. Currier.

Poems by Tegnér: The Children of the Lord's Supper, Frithiof's Saga. Translated from the Swedish by Henry Wadsworth Longfellow and the Rev. W. Lewery Blackley, with an Introduction by Paul Robert Lieder, A.M., Instructor in Modern Languages, M.I.T. 1914. xxvii+207 pages. Price, $1.50.

Tegnér is the one Swedish poet to whose works all his compatriots will at once accord a place among Scandinavian classics. This author presents the curious situation in literature of a writer who, although his chief work has been rendered a score of times into English, is not yet widely known in England and America. This has been due partly to the rarity of most of the translations. By reprinting the faithful and spirited interpretations of Longfellow and of Blackley, the Foundation hopes to make Tegnér more easily accessible to those who cannot read him in the original.

The introduction by Mr. Lieder throws new light upon Longfellow's indebtedness to Swedish literature, partly the result of Mr. Lieder's research among books and letters at Craigie House, the Cambridge residence of the American poet.

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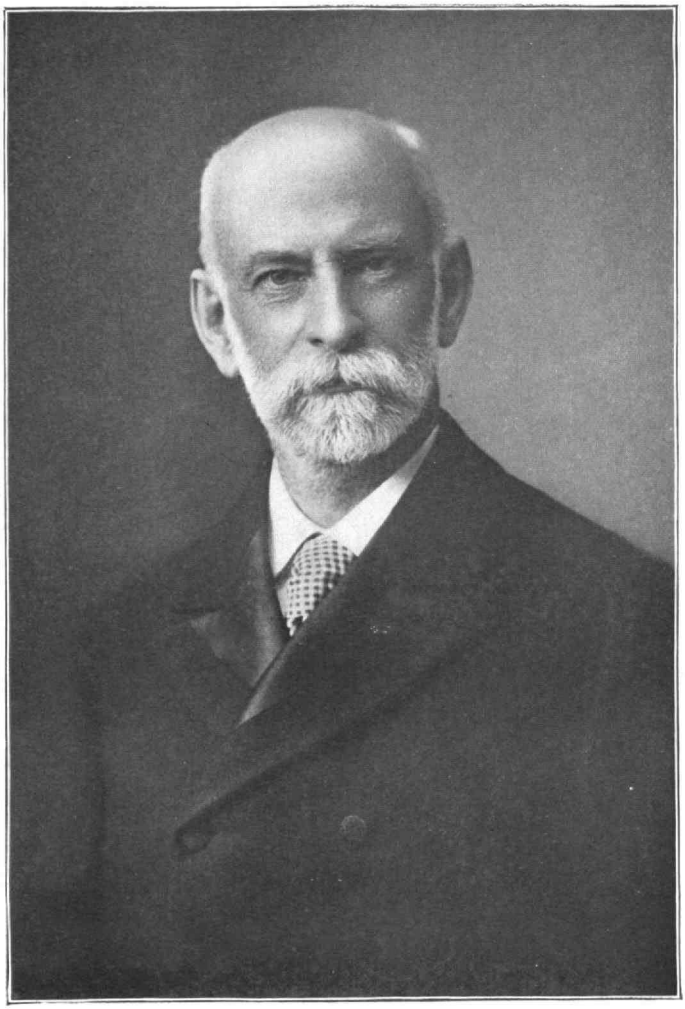


CHARLES SEDGWICK MINOT, '72

NEWS FROM THE CLASSES

1869.

HOWARD ADAMS CARSON, *Sec.*, 79 Glenwood Street, Malden, Mass.

Edwin H. Blashfield, the mural painter, is finishing a large decoration for the new State House in Salt Lake City, Utah, and it is soon to be sent. There is a radiant figure of Justice in the center, standing in front of the coat of arms of Utah, while on either side of the figure are portraits of lawyers and others in Utah of distinction. A strong feature of the decoration is the representation of men of every nationality, all looking up to the central figure, as though in appeal for their rights. There are Germans, Slavs, Swedes, Arabians, Croatians and men of Odessa in the group, symbolizing recognition of the rights of others, fidelity to promises, individual liberty in peace, through order under the law.

Mr. Blashfield is also finishing three decorations for the residence of Everett Morss, '85, of Boston. Four more are under way. The pictures are to adorn Mr. Morss' dining room. In "Hospitality" the members of the Morss family are represented. Another painting is entitled "Books," and all are excellently well placed and finely colorful figures.

1871.

EDWARD W. ROLLINS, *Sec.*, Dover, N. H.

Daniel Chester French has been chosen as sculptor of the bronze statue of Lincoln that will form a part of the Lincoln Memorial structure in Washington.

1872.

C. FRANK ALLEN, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Charles Sedgwick Minot died November 19, 1914, after an illness of about four months from a disease recognized as incurable from the first; fortunately, however, he was spared any large measure of suffering.

He came from an old and prominent Boston family, which has been traced to Saffron Walden, Essex, England as early as the fourteenth century. George Minot of this family sailed from Plymouth, England, and reached Dorchester, May 30, 1630. Charles S. Minot was the eighth in direct line from George Minot. Col. Stephen Minot, third in line, was one of the committee which drew up the charter of the city of Boston. George Richards Minot, great-grandfather of Charles, was a distinguished jurist

and historian and one of the founders of the Massachusetts Historical Society.

William Minot, the grandfather, was a lawyer, who after a time was sought to administer estates and had entrusted to him the Franklin Fund, which in the sixty years he controlled it, grew from about $5,000 to about $125,000. William Minot, the father, studied law, but practiced little, as he early engaged in taking care of trust estates. Law seemed attractive to the Minots, and it is said that five generations of lawyers in this family retained the same office at 23 Court street. The old Minot homestead, near the Neponset River, burned only a few years ago, had the reputation before that time of being the oldest residence in New England.

Charles Sedgwick Minot was the son of William Minot and of Catherine Maria Sedgwick Minot of Lenox, Mass. He was born December 23, 1852, in that section of West Roxbury (now Boston) known as Forest Hills, a little apart from the crowded life of the city. His first school was Miss Lane's private school on Eliot street, after which he attended the public schools of Jamaica Plain and there prepared for the Massachusetts Institute of Technology which he entered in 1868, being graduated with his class in 1872 with the degree of bachelor of science in chemistry, working under Storer who was one of the ablest of a corps of very able teachers. Minot was the youngest graduate of the class of '72, about nineteen years and six months old.

He early displayed an interest along scientific lines, making a collection of butterflies; that this was not a haphazard affair appears from the fact that as early as February 24, 1869 he presented before the Boston Society of Natural History a paper on the "Male of the Hesperia metea," a species of which the female only had up to that time been recorded. His interest along this line did not wane, and additional studies and the discovery of new species of insects followed, and later studies in this direction in Paris at the College de France included the microscopic anatomy of the water-beetle, and in this country the histology of the locust and cricket (1880), and in 1884 the anatomy of the cotton-worm for the Entomological Commission at Washington.

After graduation, Minot studied at Penikese and at Cambridge with Professor Louis Agassiz; he later pursued physiological studies and investigations under Dr. Henry P. Bowditch, and in 1874 published a joint paper on the effect of anaesthetics on the vaso-motor centers. Soon after this we find him at Leipzic, under Dr. Bowditch's former teacher, Carl Ludwig, whom Minot many years later referred to as the greatest teacher of the art of scientific research whom he had ever known. He also studied there under Leuckhart and in Würzburg under Semper, and also at Paris. That Minot had great opportunities in his association with a number of great and inspiring men goes without saying, and that he made much of his opportunities is equally clear.

On his return to America in 1878 he published a paper on tetanus based on extensive experiments. Harvard College in the same year conferred on him the degree of S. D.

In 1880 his connection with the Harvard Medical School was begun, his first appointment being that of lecturer on embryology, and shortly after instructor in oral pathology and surgery; later he was instructor in histology and embryology. In 1887 he was given the title of assistant professor and in 1892 professor. Since 1905 he has been James Stillman professor of comparative anatomy. In this country anatomy has been commonly considered simply an adjunct to surgery; in Europe, however, it has held a high place as a science and great men have given their time to it and have received great honors in doing so. Dr. Minot stood almost alone in this country as an anatomist comparable with the distinguished anatomists of Europe. When Dr. Oliver Wendell Holmes died, Minot succeeded him in a part of his work and Dr. Thomas Dwight, another part; later under the James Stillman professorship, the work became again concentrated.

During his years at the Harvard Medical School, from a very modest equipment and appropriation for microscopic work in his department of histology, Minot brought the laboratories to a very high state of usefulness and completeness. It contains a collection of over nineteen hundred embryos of various animals, fully arranged and catalogued, described by him as "a sort of cyclopedia of vertebrate embryology to which one can turn at any moment and get the desired information as to the principal development of any structure whatever." It has formed the basis for important investigations both by Dr. Minot and others. In connection with his work along this line he invented two different forms of microtomes for use in preparation of specimens or subjects for study and lecture. As early as 1879 Minot began a study of the nature of growth extending over a number of years, using guinea pigs for the purpose.

Of his publications the "Human Embryology," 1892, a book of 800 pages, became standard throughout the world. His "Bibliography of Vertebrate Embryology," 1903, was the most complete ever compiled. In these books were contained very nearly one thousand references. Another very useful book was his "Laboratory Text-Book of Embryology," 1903. His "Age, Growth and Death" was published in 1908, and a small book, "Modern Problems in Biology," was the outcome of his appointment as exchange professor to Berlin and Jena Universities, in 1912–13, when he appeared in some sense as the representative of anatomy in America. His lectures, apparently prepared and certainly delivered in German, appeared in English as a translation.

In recent years Minot enjoyed telling of his student days in Germany where upon one occasion his fellow students were dumbfounded that Minot's knees failed to tremble at the approach of

the Emperor when he visited the university. Minot was set down as an incorrigible republican. As exchange professor trembling of the knees could hardly be expected.

In addition to his books, Minot's papers together with his presidential and other addresses amounted to one hundred and eighty, or more, in number so that any attempt to list them or to tabulate would be quite out of place here. They covered a very considerable range in subjects.

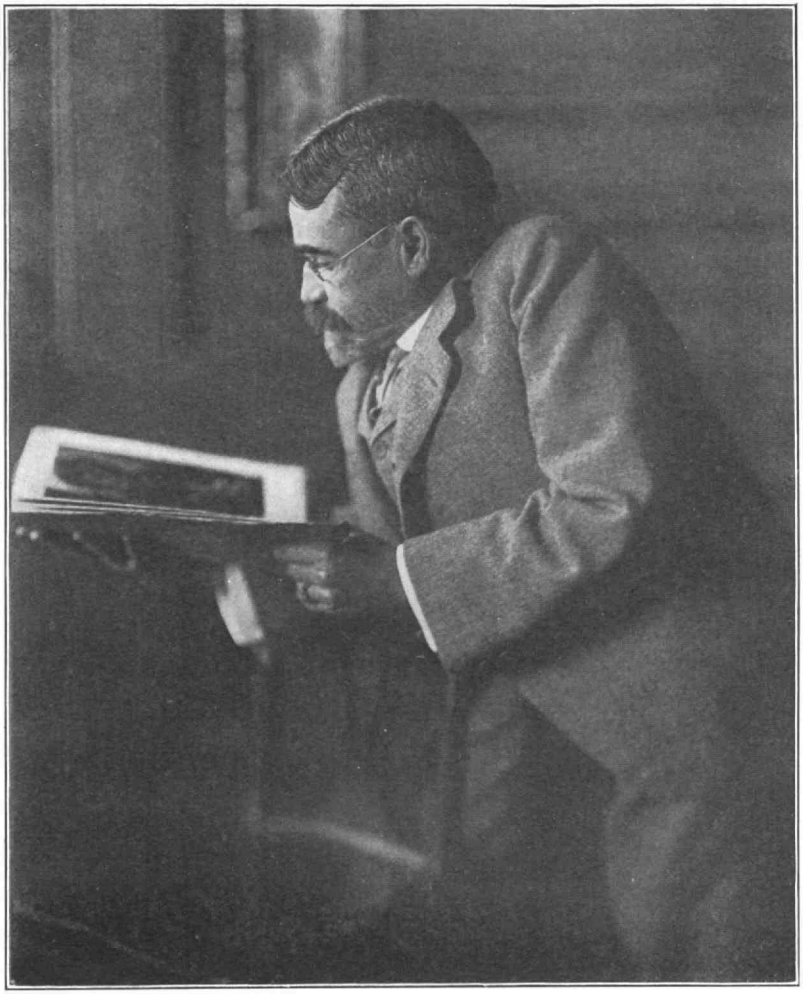
When the present Harvard Medical School buildings were designed Minot became interested in their arrangement and to him was due primarily the "unit system" adopted there, and copied extensively, being apparently the system recently referred to in the TECHNOLOGY REVIEW as the sectional book case system. In the "unit system" what may be called the panel length between windows became the unit for length and a lecture room, an office, or a laboratory was defined by a partition at the end of one or two or any number of units.

Minot also had a hobby for floriculture, which perforce he carried on scientifically, his choice falling upon peonies, which he cultivated at his Milton home. His collection is said to contain more than three thousand varieties.

Dr. Minot was the first alumnus of M. I. T. to receive the degree of LL.D., this being conferred on him by Yale in 1898. In 1902, he received the degree of D.Sc. from Oxford, this being at that time a nearly new degree, conferred upon him only in that year, the occasion being the Tercentenary of the Bodleian library where Minot was present as the senior representative from Harvard University. In 1904 he again received the degree of LL.D., this time from the University of Toronto; and again in 1911, LL.D. from St. Andrews University of Scotland.

He was a member of many scientific societies, of the National Academy of Sciences, and of the American Academy of Arts and Sciences. In the American Association for the Advancement of Science he was general secretary for several years and president in 1900; he was also a member of the British Association for the Advancement of Science. He took an active part in the formation of the Marine Biological Laboratory at Wood's Hole, of the Society for Psychical Research, and of the American Society of Naturalists of which he was at one time president. He was president of the Massachusetts Zoölogical Society; he had been president of the Boston Society of Natural History for many years up to the time of his death. In 1913 he was made honorary member of the Anatomical Society of Great Britain and Ireland.

Other societies were in America the New York Academy of Sciences; American Philosophic Society; American Physiological Society; American Psychological Association; Association of American Anatomists. In Europe he was a member of the Royal



CHARLES NELSON WAITE

Chemist and Scientific Investigator. Class of 1876 Massachusetts Institute of Technology. Died November 20, 1914

Academy, Turin; Society of Biologists, Paris; Royal Medical Academy, Belgium; Anatomische Gesellschaft, Jena.

Minot was too busy a man to give a large amount of time to Institute affairs, but he always maintained an interest and at times was active. In 1878 an attempt was made to secure for the Institute a grant of money from the State. Minot's name appears as chairman of the committee of the alumni to assist in this work, and he made the address in behalf of the alumni before the committee of the Legislature. He was a frequent though not constant attendant at alumni and at class dinners, was a willing contributor to the Alumni Fund, and though using it little, was a member of the Technology Club from 1896 to 1903, a matter of loyalty to the Institute apparently. He was a member of the St. Botolph Club in Boston, and the Cosmos Club of Washington; and had been a member of the Athletic Club of Boston when that was convenient to the Harvard Medical School.

Dr. Minot was married in 1889 to Lucy Fosdick of Groton, who survives him. He had two sisters and four brothers, the only survivor being a younger brother, Laurence Minot, well known in Boston both as a business man and through his connection with the Good Government Association.

1876.

JOHN R. FREEMAN, *Sec.*, Grosvenor Building, Providence, R. I.

Charles Nelson Waite, Chemist and Scientific Investigator, graduate of the Mass. Inst. Tech. in class of 1876, died in Wilmington, Delaware, Nov. 20, 1914.

I have never known a man who entered the battle of life under such a weight of physical infirmity who made so great a success as our beloved classmate Charley Waite.

His frail, deformed body was strangely out of harmony with his magnificent, beautiful head and the brain that it contained, and I never have known so keen and cheerful an optimist.

While possessing hardly more than the body of a feeble child (he weighed only 78 lbs. at graduation), he determined to do a man's work in the world and he carried such an air of cheerfulness, optimism, goodfellowship and brilliancy of conversation that he strengthened and cheered all with whom he came in contact.

After graduating from Technology he became chemist of the Manchester Print Works at Manchester, N. H., to which establishment his classmate, Charles T. Main, soon afterward came as mechanical engineer, while another classmate, Norton, afterward professor of industrial chemistry at Technology, was chemist at the Amoskeag, and the trio did much to add to the cheerfulness of life among the young folks of that city.

Charley Waite was capable of the scientific use of the imagina-

tion to a remarkable degree and his skill, as manifested in the new processes in the dye house, was soon saving the corporation many thousands of dollars annually. Later, he became interested in the manufacture of lactic acid, the problems of bio-chemistry being especially attractive, which, as he stated with his customary touch of humor, gave him "the opportunity to command such large numbers of employees." Another touch of this humor was in his statement to a classmate, who asked what he was busy with, that he was busy demonstrating the truth of Dr. Oliver Wendell Holmes' theory that "to live forever one must have an incurable disease." Like the lamented Holman his was a wonderful triumph of mind and will over the body, and his cheerful optimism was most wonderful of all.

Later, the problems of cheap chlorine for paper mill use absorbed his attention and he planned and supervised the building of the plant for this purpose at Rumford Falls, Me., which brought him into such close contact with the paper industry and the problems of cellulose that questions of the derivation of artificial silk and allied products occupied a large part of his attention for many years. J. R. F.

The following notice of his death appeared in the *Sunday Star* of Wilmington, Del.:

The funeral of Charles Nelson Waite, nationally recognized as a chemist of remarkable skill, was held on Thursday afternoon at his late residence, No. 1105 Madison street. The services were conducted by Rev. F. M. Kirkus, rector of Trinity (P. E.) Church. His sister, Mrs. Henry Magoun, of Vancouver, came on Thursday morning for the funeral. One brother, Otis J. Waite, of the First National Bank, Jacksonville, Miss., also survives. At his expressed wish cremation took place Friday morning at Chelten Hill, Germantown, the ashes being scattered.

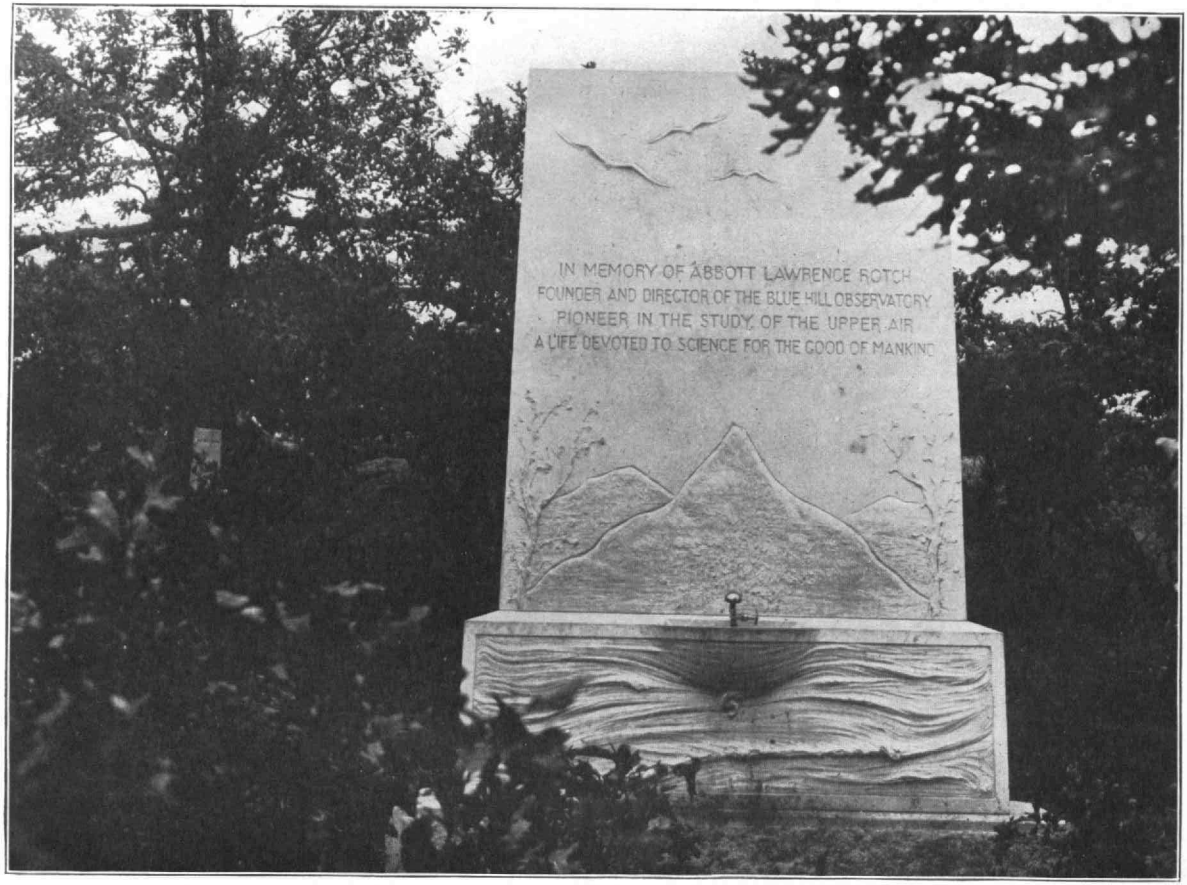
Mr. Waite had lived in Wilmington about ten years.

He died on November 20 in the Delaware Hospital an hour after he had been stricken with apoplexy at The Playhouse. Of a naturally retiring disposition, Mr. Waite, beyond the circle of friends to whom he had endeared himself, was never fully appreciated by his fellow-citizens, for he was one of the foremost authorities in the United States on chemistry, especially as it related to the science of paper manufacture and the artificial silk business.

He brought from England the patents on the artificial silk and for several years worked with them to improve and perfect where he could and to elaborate on their scope and the usefulness of the industry. It was chiefly through his efforts that the American Viscose Company, which now has an enormous plant north of Claymont, was organized

His advice on questions pertaining to the chemical part of paper manufacturing was sought by most of the large firms in America.

He was a consulting chemist for the Pusey & Jones Company,



MEMORIAL FOUNTAIN TO A. LAWRENCE ROTCH, '84 Bela L. Pratt, Sculptor

Near Blue Hill Meteorological Observatory

and the Joseph Bancroft & Sons Company. Frequently he was called into consultation by the American Viscose Company, at Claymont, when some question arose relative to the business which the best of the other experts could not solve. At the time of his death he was chief chemist with the Jessup & Moore Paper Company, with which concern he had been engaged for about ten years. He was a member of the American Chemical Society, and the American Electro-Chemical Society.

Mr. Waite had perfected numerous patents of his own on paper-making and on the chemical end of other industries.

He was a graduate of Massachusetts Institute of Technology of the class of 1876. His culture was well rounded. Well read and an extensive traveller, he was a brilliant conversationalist who charmed all who came in contact with him. He possessed a lovable, affable disposition which endeared him to his host of friends.

By his death, therefore, Wilmington is robbed of one of its most brilliant minds, and foremost citizens, and one of the most delightful and charming men who ever lived in this city.

1881.

FRANK E. CAME, *Sec.*, Metcalfe Apartments, Westmount, Quebec, P. Q.

FRANK H. BRIGGS, *Asst. Sec.*, 10 High Street, Boston, Mass.

Allen, Duff, Winslow, Cabot and Briggs represented the class at the dinner to "Bobby" Richards.—Barnes is reported as having been in New York in November.

1882.

WALTER B. SNOW, *Sec.*, 136 Federal Street, Boston, Mass.

The thirty-third annual dinner of the class will probably be held on Thursday, February 4.—French, Low, Munroe, and Snow attended the testimonial dinner to Prof. Robert H. Richards at the Copley Plaza on December 7.—Katherine Langdon Munroe, daughter of Mr. and Mrs. James P. Munroe, was married on January 9 to Frederic Lansing Day.

1884.

HARRY W. TYLER, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

By the courtesy of Director McAdie of the Blue Hill Meteorological Observatory the REVIEW presents an illustration of the beautiful memorial fountain, designed by Bela L. Pratt, the sculptor, and erected by Mrs. Rotch, a short distance below the observatory. The hill has always been much visited on fine days and the impossibility of providing water freely at the summit

has been a frequent cause of disappointment, now fortunately removed.

Besides sons of members of the class previously mentioned, there are registered this term, R. P. Kennard, son of the late W. P. Kennard, '84, and E. A. Mead, son of F. S. Mead.—The secretary had the pleasure of a call by Colonel and Mrs. Lyle in November, during the meeting of the U. S. Board of Life Saving Appliances of which Colonel Lyle is still a member.

1885.

I. W. LITCHFIELD, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

Charles A. Brown has recently sold the business of C. D. Brown and Company to Mac Andrews & Forbes Company, a very large concern making "Fiberlic" board products. Charles has been made president of the company and is now at Camden, N. J., the headquarters of the company. The change has only recently been made so that Charlie will be coming to Boston frequently until he is located in Camden.—Billy Dawes, who lives in Brockton, recently called on the secretary. He is looking well and expects to meet with the class at the anniversary this year.—Mullins, whose home is in Franklin, Pa., has been appointed a member of the publicity committee for the big all-Technology reunion in Pittsburgh, February 19–20, and a special representative of the class of '85. Faithful to his trust he is writing to various members of the class, and he expects that '85 will have the largest delegation on that occasion. Charles Brown will be there, and although there are no '85 men in Pittsburgh, there are several within striking distance.—The *Engineering Record* recently made the following announcement in regard to Fred Newell: Secretary Lane announced on December 4, that the office of director of the U. S. Reclamation Service would be abolished on December 10, and that the positions of chief engineer and director would be consolidated. A. P. Davis, the present chief engineer, will serve as director and chief engineer. F. H. Newell, the present director, will be continued as a consulting engineer. Mr. Newell has been a frequent contributor to the *Engineering Record*, his most recent article being "The Human Side of Irrigation," published August 29, 1914, page 236. Associated with D. W. Murphy he published a 293-page book entitled "Principles of Irrigation Engineering." Mr. Newell is also the author of "Irrigation Water Measurement."—Bob Richardson, who went abroad last spring on business, was caught over there between the opposing armies, and had to fight his way through the lines with nothing but a passport, money, and plenty of friends and influence. It will be remembered, however, by many Chicago men, that during the Spanish war at some maneuvers at the Bismarck restaurant, Bob, representing the Spanish forces, entirely demolished the American army, tactically. His

experience has evidently stood him in good stead. He is now at 3521 Tracy Avenue, Kansas City, Mo.—Tenney White went into hibernation in Brookline late in the fall and has not appeared since, even on very warm days.—At the recent dinner, given in honor of Professor Robert H. Richards' completion of fifty years' service, the following '85 men were present: Talbot, Merrill, Williams, Morss and Litchfield.

1887.

E. G. THOMAS, *Sec.*, Kewanee, Ill.

Walter C. Brace, whose death occurred in August, spent nearly all the years of his professional work in the Far West so that few of us have had the opportunity of continuing the acquaintance and friendship of our Institute years. Shepard sends me the following account of his work and his death:

Answering your letter of December 4 with reference to Brace, I am sorry to report his death in Utica, N. Y., as a result from a severe nervous breakdown.

When Brace came to Colorado he spent considerable time and I think invested in a smelting plant in Rico. This did not seem to develop favorably and so he came to Denver where he entered into the profession of mining engineering. He acted as consulting engineer for several mining companies and for some years acted as manager for several companies, conducting important enterprises.

During the last two or three years, the mining business has been below normal with the result that these positions which were paying him salaries were discontinued and so he lost considerable revenue.

He was always industrious and persistent in making the most of any prospect and finally when all other openings failed, accepted a position in Ouray, Colo., in charge of some sampling operations.

There he was stricken with a serious nervous prostration, no doubt due to worry and anxiety, and on advice of his physician went to Utica, N. Y., with Mrs. Brace. During a storm on a lake, he was seeking shelter in a boathouse and fell into the water and was drowned. This was the report of the coroner's inquest.

Mrs. Brace was well-nigh prostrated but through the assistance of Denver friends has arranged matters so that she will be with her daughter Letetia, who is in her third year at the University of Colorado at Boulder. Harriet, a younger daughter, will be with them in Boulder. Porter, the oldest, now about twenty-five, graduated at the University of Colorado, Boulder, as an electrical engineer and is now in New York City, I believe.

Brace was a member of the Colorado Scientific Society, the University Club, the Electric Club, and several local organizations.

The secretary is at present engaged in the planning of the factory and machinery of a new industry in Chicago, but is also engaged in starting a local industry in Kewanee suited to the farming community in which he lives—the manufacture of a new hog oiler—his invention. If you do not know what a hog oiler is, send for a circular to the Thomas Manufacturing Company, Kewanee, Ill.

The navy record of Lieutenant-Commander Fred Thompson, who died at San Diego, Cal., April 25, 1914, was as follows: In September 1898 he was appointed civil engineer in the navy, and was assigned to the Navy Yards at New York. In March 1899 he

was assigned to the Navy Yards at Norfolk, and, in June 1905 to the Navy Yards at Boston. In March 1906 he became a lieutenant and in November 1909 a lieutenant-commander. His later work has been in connection with the operation and improvement of the naval coaling stations along the Pacific coast, and at the time of his death he was in temporary charge of the improvement of the coaling depot in San Diego.

1888.

WILLIAM G. SNOW, *Sec.*, 24 Milk Street, Boston, Mass.

Harold Osgood Binney died in New York, November 22d last.

Soon after leaving Tech Binney was appointed assistant examiner in the United States Patent Office.

He left before graduation in order to accept this position. He studied law at the Columbian Law School and was admitted to the bar of the District of Columbia in May 1890.

Soon after he came to New York and received the degree of LL.B. in 1891 from the University of New York Law School. His law practice has been almost exclusively in connection with patents. Binney was much interested in yachting and automobiling. In 1907 he sailed his 52-foot schooner *Mist* in the New York-Bermuda race. He was always interested in class affairs, was present at our twentieth reunion and also at the one held in connection with the All-Technology reunion in New York a couple of years ago.

Charles H. Mower of London writes the secretary from Paris:

I am sending you the first edition of the Sturtevant "War Letters," which may be of interest. I have not met any Institute men since I have been in Paris, but very likely there are some here. If you think that any of the '88 men would be interested in subscribing to these "War Letters" if you will send me their names and addresses, I will be pleased to send them a copy.

We have about forty of the Sturtevant Staff in active service, and about 160 other employees in our different companies are also serving, so altogether we have quite a bunch of men in the war. We are naturally very much interested in any letters we may receive from them, as they give details which are impossible to get in the papers and moreover which can be depended upon.

The American Hospital here is probably the most complete one in Paris; over 300 wounded are being taken care of at the present time, and they expect to largely increase it. A number of friends in America have offered them a fleet of 44 motor cars; with this extra equipment they will be in a position to do a tremendous amount of good work by going right on to the battlefields and bringing back the wounded with the least amount of delay to the hospital here in Paris. Perhaps you would be able to give the hospital a "leg up" in the class notes you write.

Mower was in Boulogne August 28 on business and states:

Some English newspapers came over which informed us of the fact that the Uhlans were reported thirty miles from Boulogne, "going strong." We concluded that a further stay in Boulogne would not be healthy, so we took the road to Paris south through Le Touquet, Montreuil, and Abbeville.

We did the distance between Boulogne and Abbeville in record time, keeping a sharp lookout for the enemy. We were very glad not to meet them, or have

any accident to delay us. At Abbeville we crossed the French extreme left wing; the town itself was filled with soldiers and many barricades had been put up in the streets, and it was evident that the German attack was expected at Abbeville at any minute.

I never experienced a more deathly silence than prevailed in this town; small groups of inhabitants were talking in low tones together, but one could easily see that they fully expected almost at any moment to be called to defend their homes.

The news in the Sturtevant "War Letters" from men at the front is of stirring interest.

Henry J. Horn is the nominee for the presidency of the M. I. T. Alumni Association.

From the *Times*, New York City, dated November 22, we take the following account of the death of George L. Manning:

Dr. George L. Manning, professor of physics at Robert College in Constantinople for the past seven years, died November 20, in Florence, Italy, according to advices received by his sister, Mrs. John O. Heald, of Orange, N. J. He was on his way home to recover from a recent illness, and it is supposed that he suffered a relapse when he reached Italy. Dr. Manning was born in Keene, N. H., and was fifty years old. He was descended from an old Colonial family and attended the Massachusetts Institute of Technology, afterwards teaching in Stevens Institute in Hoboken and at Cornell University.

Dr. Manning is survived by his widow, who was Miss Alice W. Heald, of Llewellyn Park, West Orange, and by his sister. His body will be brought here for burial.

1889.

WALTER H. KILHAM, *Sec.*, 9 Park Street, Boston, Mass.

George C. Whipple has been appointed by Governor Walsh of Massachusetts to the new Health Council which supplements the office of the health commissioner.—Sauveur has written a very interesting sixty-page pamphlet on "Germany and the European War," the proceeds of the sale of which are to be donated to the fund for the Belgian refugees. He states that he has plenty of these for any '89 men who would like copies.

At this writing, December 10, the secretary has received about forty-five replies to the circulars relative to the new book and is in process of sending out 130 hurry-up letters to the delinquents. He feels like saying that if these latter really do not want the book he would appreciate it if they would say so as it would save a great deal of work and uncertainty on the part of the editors. This is the psychological moment to have the book as after this year the occasion and opportunity will be gone. All the material is ready for the printer except the personal records of the classmates.

1890.

GEORGE L. GILMORE, *Sec.*, Lexington, Mass.

Charles Hayden has been elected vice-president of the Boston Stock Exchange.—Norman G. Nims, who is with Murphy &

Dana, architects of New York, has devoted the last six years continuously to work on the new municipal building of the city of New York, and has published an address that was delivered before the municipal engineers of the city of New York that is most interesting.—J. B. Baker has given up his position with the Telephone company, and is now a public practitioner of Christian Science healing with office at 1 West 34th street, New York City. Baker has been practicing the healing work for several years in connection with or along with his position, which was that of a freelance writer on technical and engineering matters. Recently the way was open for him to take an office to practice Christian Science and to devote a definite part of his time to this work. Mornings he writes advertising copies for the *Class Journal* Company but afternoons he is at his office waiting for the call, and has been very busy since he started. —At the Tech club in New York on October 13, a dinner was held for the classes of '84 to '93. Our class was represented by Clement and Gilmore.—Otis Daniel at Tilton, N. H., in October was elected president of the Brunswick Fox Hound Club.—Henry M. Waite, city manager of Dayton, Ohio, under its new form of government, in an address before the Engineering Societies of Boston in Chipman Hall, November 19, said he believes the executive management of a city may best be placed in the hands of an engineer, because the large municipal problems today are chiefly problems of pure engineering. He came to Boston from Springfield, where he had been invited to explain the city-manager plan before the citizens' charter commission of 100, which is considering proposed changes in the city charter. He said the form of which he is the exponent seems to him the most efficient yet tried and the only one working along logical lines. At the outset he criticised the older federal form of city organization. Before a new system could be introduced, he said, the grasp of professional politicians must be loosened and ward and precinct organization relegated to the past. He called attention to the necessary allegiance of the political appointee to his political machine and the popular belief that the mayor and his administration should be blamed for all shortcomings, even though the chief executive were tied hand and foot and shorn of administrative power.

"Municipal efficiency," he continued, "depends upon the divorce of politics from municipal affairs. This has been accomplished in Dayton. The laws of the state of Ohio now allow cities to write their own charters and to enjoy home rule. Dayton accepted the commission-manager form. Five commissioners were elected last November on a short non-partisan ballot. They are all business men excepting one, who was a wage-earner, a typesetter. The commission appointed a city manager and it is in the manager's power to appoint the five directors of law, finance, welfare, safety and service.

"The present directors of the first three departments were

selected citizens of Dayton, well qualified by previous experience, but the commission was unable to recommend anybody in Dayton as directors of safety and service, and they were chosen from residents in other cities who had shown ability.

"By a scientific budget the expenses of every department are absolutely fixed and limited. A new accounting system has been put into effect, giving the city complete control not only over current funds, but over all equipment, stores and public properties. For the first time the inventory of public property is given in cash value and is shown on the balance sheets.

"A statement is given the public every month, showing the cash balances and the expenditures in each department. All departmental book-keeping has been eliminated and the money is placed in one central fund under the control of the directors of finances. This has made it possible to avoid borrowing $125,000 to cover the floating debt incurred by previous administrations, saving about $6,000 in interest.

"The charter requires the commission to employ a public accountant to keep a running check on the books and the report for the first six months shows a saving of $46,505.38 over what was expended for the same period last year under the old form of government, although there was more actual work done. Publicity is given to all actions, plans and financial statements, thus taking the public into the city's confidence and holding its interest.

"Upon assuming office last January I found the water system, the sewer system and in fact all of the departments of public service taxed to their utmost capacity. After a thorough overhauling of the plants and making a number of comparatively inexpensive alterations, the capacity of the present equipment was increased from 25 to 50 per cent. over what it was formerly. This resulted not only in saving, but postponed the time at which the plants would have to be extended. It has enabled the city to make plans for extension with a view to its ultimate growth.

"Most American cities are suffering from the lack of proper city planning. Dayton's charter provides for a planning board, which is empowered to plat all property within the city limits and for three miles outside. The sewer system is now being revised and plans have been completed for extending the water system at an expenditure of $1,000,000 in the next two years and $2,000,000 more by 1930. These expenditures will allow a decrease in the cost of operation, which together with the increased revenue will pay the interest and the sinking fund on this additional indebtedness.

"The five commissioners, elected on a short ballot, form the legislative body. The manager is directly appointed by them and is directly responsible to them. The commissioners, like the board of directors of a corporation, direct the policy of the city government, passing all ordinances and referring questions to the city manager for investigation and consultation before taking action.

"The commissioners are given a free hand to appoint the city manager solely for his ability to run the city government as a business enterprise, without any regard to his political faith or whether or not he is a resident of Dayton. They extend to the manager the same privilege of choosing the heads, called directors, of the five departments.

"There are now 16 cities governed by city managers, but there are many others seriously considering this form of government, among the most prominent of which is Springfield, Mass., and they look to Dayton as an example of the benefits to be derived by its application in a city of over 100,000 population."

The new residential section opened up by Schuyler Hazard in the south part of the village of Albion, N. Y., is now ready for use. This tract of land, situated about half way between West avenue and Allen street, which until Mr. Hazard put through "Hazard Parkway" was a long block about one-half mile in length, is splendidly located and nicely adapted to the purposes of home building.

The following description is from a New York paper dated October 22:

The entire scheme is unique in conception and reflects great credit upon Mr. Hazard, whose artistic taste has given to Albion something of which it may well be proud. With characteristic energy he began and carried through in his usual quiet manner this beautiful piece of work, having the hearty and complete coöperation of the village trustees, who have been in thorough sympathy with the work, knowing that it would result in great benefit to the village and to the enjoyment of its citizens. This new street is splendidly constructed, having macadam roadways, Medina sandstone gutters and curbing, and cement sidewalks, and is up-to-date in every respect. An entrance gateway in white Medina sandstone and of colonial design marks the Main street end. A short distance from Main street the roadway proper divides into two driveways and this division, seven or eight feet wide, is curbed with Medina sandstone and forms a raised parking that is sowed to grass and upon which are beds of beautiful flowers. The roadways come together again near Clinton street, and the whole layout, with its graceful curves and angles, is one of beauty.

Before the surface was put on the roadways a complete sewer system was installed with all necessary laterals laid to the property lines for each lot, with the necessary manholes and flush tanks, and the whole system connected with the new system of sewers now being constructed by the village and which will be ready for use during the next thirty days. In this matter Mr. Hazard had the hearty coöperation of the Board of Sewer Commissioners. Water mains also have been laid and house connection services have been put in for each lot. In like manner gas mains were laid and house connection services for each lot installed. All of this work was done so that when the surface work on the roadways was completed the street would be finished and thus the tearing up of the new surfaces would be avoided. This is an especially good feature in so far as practical things go.

Mr. Hazard is rebuilding the old Field Homestead, using a colonial design, which, when finished according to plans drawn by himself, will add greatly to the appearance of Main street as well as Hazard Parkway, lying as it does on the southeast corner of these two streets.

Do not forget the Tech alumni reunion this year that is to be held at Pittsburgh, February 19 and 20. As we are the twenty-fifth year class, it is hoped that all who can will make an effort to be present. Further details will be mailed direct to all members.

The first issue of the *Ninety Tea Kettle* has been mailed to all members of the class and your secretary is now awaiting replies and hopes that the majority will be present at the reunion in June, which will occur at the Hartford Yacht Club, Saybrook Point, Conn., from the afternoon of Thursday, June 3, to Monday morning, June 7. A number have already signified their intention of attending, and it is hoped that we shall soon hear from the rest of you, so that a list of those who are to be present can be published in the next issue of the *Tea Kettle.*

W. Z. Ripley, among other experts, discussed two phases of the railroad capitalization problem, in Chicago, November 13, at the eighth conference of the Western Economic Society. From the *Boston Herald* we take the following account of Professor Ripley's argument:

The Harvard expert discussing railway valuation traced immense losses to investors who were the victims, he said, of over-capitalization which would at least have been curtailed by physical valuation.

Professor Ripley argued that physical valuation, on which the government was spending $15,000,000 to $20,000,000, would have protected the investor from the stock jobbing apparent in the difficulties which now beset the New York, New Haven & Hartford, the Rock Island, the 'Frisco, the Boston & Maine and other roads.

The Harvard economist observed that the attitude of the railroads had changed from vehement objection to government regulation to a rather cheerful acceptance of new conditions.

"This change of opinion has followed a gradual appreciation of the protective value to vested interests of a complete revelation of all the existing financial facts," he said. He asserted that physical valuation was merely a phase of a sound accounting system.

1893.

FREDERIC H. FAY, *Sec.*, 308 Boylston Street, Boston, Mass.
GEORGE B. GLIDDEN, *Ass't Sec.*, 551 Tremont Street, Boston, Mass.

Remember the Pittsburgh reunion of the Technology Clubs Associated, February 19 and 20, 1915. Full details in later notices. Help swell the '93 delegation, if possible.

In the election of Albert Farwell Bemis to life membership in the Institute Corporation in October last, just recognition has been given to the splendid service that he has rendered Technology, both as an undergraduate and an alumnus. While a student he was prominent in undergraduate matters and accomplished much for the advancement of the Tech spirit and the student social life. Since graduation his interest in alumni affairs has been most active and helpful. He has long served as a member of the Walker Memorial Committee. He was chairman of the committee on the student housing problem at the New Technology, whose masterly report was presented to the Alumni Council not long ago. As a member of the alumni committee on the Summer Camp for Surveying, he was largely instrumental in providing for the Institute the splendid camp of eight hundred acres, with its model equip-

ment, on the shores of Gardner Lake near East Machias, Maine. In appreciation of years of loyal service, he was elected president of the Alumni Association in 1910, and his administration was notable in placing the affairs of the association on a sound business basis. While the congratulations of the class have been showered upon Bemis for the honor which he has just received, all who know him feel that the Corporation itself is to be congratulated in enlisting in its membership a man of broad views and high business standing, and particularly one who is so loyal to his alma mater.

Louis B. Vining is chief draftsman for the Gamewell Fire Alarm Telegraph Company, Newton Upper Falls, Mass., his home address being 36 Broadway, Newtonville, Mass. In the fall of 1893 Vining entered the employ of the Chicago Telephone Company, as draftsman, and after two years returned to Boston and became connected with the Gamewell Company, with whom he has been employed to the present time. In 1907 he married Miss Susie Blanchard, and they have one daughter.—Augustus B. Wadsworth is a physician at 114 West 55th street, New York City. Wadsworth writes:

> After graduation I entered the College of Physicians and Surgeons, Columbia University, receiving the degree of doctor of medicine in 1896. In 1900 I began the practice of medicine in New York City, having served two years in St. Luke's Hospital, and having studied in Berlin and Vienna. For the past thirteen years I have also been connected with the College of Physicians and Surgeons, holding fellowships in research, and only recently resigning my assistant professorship to devote my time to practice.

Wadsworth married in 1910 Miss Caroline Delano and they have one son. He is a member of the American Association of Pathologists and Bacteriologists, the Association of American Physicians, the American Society for Advancement of Clinical Investigations, the Society for Experimental Medicine and Biology, New York Academy of Medicine, president (1913) of the New York Pathological Society, secretary (1913) of the Harvey Society, member of State and County Medical Societies, the Association for the Advancement of Science, and the University Club of New York. Wadsworth has written a great many technical and scientific papers on medical subjects.—James S. Wadsworth is an Osteopathic physician at 178 Huntington avenue, Boston, his home address being 140 Highland avenue, Somerville, Mass. After leaving the Institute, Wadsworth worked for a time with the General Electric Company in their drafting room, and on their expert course, and later became connected with the New England Telephone and Telegraph Company, where he remained until 1908, in various capacities. In the fall of that year he entered the Massachusetts College of Osteopathy at Cambridge, Mass., receiving his degree of doctor of osteopathy in 1911. He married in 1898 Miss Lillian Mabel Harris.—Samuel P. Waldron is contracting manager for the American Bridge Company of New York,

in charge of their Boston office at 120 Franklin street, his home address being 87 Warren street, West Medford, Mass. Waldron has been engaged in bridge work practically all the time since his graduation from the Institute. Until 1897 he was with the Boston Bridge Works as draftsman, later holding a similar position with the Pennsylvania Steel Company for a short time. From 1898 to 1900 he was assistant engineer of the Keystone Bridge Works, and in 1900–01 was assistant engineer of the Eastern Bridge & Structural Company of Worcester, Mass. In May, 1901, he entered the Berlin Plant of the American Bridge Company, for a year as chief draftsman, and then as engineer of the plant. In December, 1903, he became an engineer in the New York office of that company, and from 1905 to 1912 held the position there of designing engineer. In 1912 he was transferred to the contract department, and was made manager of the Boston office January 1, 1913. Waldron married in 1897 Miss Harriet Billington and they have one daughter. He is a member of the American Society of Civil Engineers, Boston Society of Civil Engineers, Engineers Club of Boston.—Amasa Walker is a publisher of school books, at 449 Fourth avenue, New York City. He writes:

On leaving the Institute I took work in English at Harvard in 1893–94 to fit for newspaper work. From Harvard I went to work for *The Springfield Union*, in Pittsfield, Mass., and remained there about six months, when I entered the employ of Harper & Brothers, New York, in their educational department. In about three years I was sent to Boston and there opened a New England Agency. When the Harpers failed in 1900, I went to work for D. C. Heath & Company, and remained with them for about two years I resigned to open a New England Agency for D. Appleton & Company, and continued in their employ until I resigned to take charge of the educational work for Longmans, Green & Company, at New York. I have been the general manager for ten years. My work is wholly with school books, and consists in getting, editing, making and selling. We have branch offices under my charge in Boston and in Chicago. Lately I have become much interested in scientific management and was one of the speakers at an economic society conference, held in Chicago in March, 1913. My training in Course IX prepared me to appreciate the application of science to commerce. Hitherto it has been concerned chiefly with production. In my spare moments I am engaged in demonstrating that science can be applied to distribution.

In 1898 Walker married Miss Anne B. Babcock, and they have one son and reside at Scarsdale, N. Y. Walker is a member of the Chi Phi Fraternity, the Technology Club of Boston, the City Club of New York, Sons of the Revolution, Union Society of the Civil War, Society of American Wars, and American Geographical Society. In the *Journal of Political Economy* for May, 1913, he published an article on "Scientific Management Applied to Commercial Enterprises."—Frederic I. Warren is division engineer with the Bucyrus Company, South Milwaukee, Wisconsin. He writes:

I entered the lumber business with a head the size ordinarily found on a man that has been to college for a year or two. Went broke during the panic of 1892–93 and continued so. Put the next few years in with the Pennsylvania Railroad Company, as inspector, and later with the Westinghouse Electric & Manufacturing Company as inspector. This covered a period of nine or ten years, during which

time I received training which proved of value. With only two years at college I now entered the engineering field with the Industrial Works at Bay City, Michigan, and developed most of the machines which they now build, the most prominent of which is a tunnel-wrecking crane for the Pennsylvania Railroad, located at the terminal in New York. I am still designing cranes, pile drivers, etc., but for the Bucyrus Company, South Milwaukee. I don't run across many Tech men for some reason or other. As to amusements my strong point is motor boating and if you are not a bug get in the game. Nothing like it. Get a fast one.

Warren married in 1894 Miss Ava Annett Hastings, of Jamestown, N. Y., and they have three daughters.—Rigby Wason is engaged in the manufacture of electric light and gas fittings, being senior partner of the firm of Perry & Co., 21 Grafton street—Bond street, London, England. His home addresses are 91 Onslow square, London, and Blair Dailly, Scotland. He is still single. He writes:

On graduating I entered the electric light branch of the General Post Office, St. Martins le grand, London. Rose to be senior officer on charge of shift and was transferred to the Crown Agencies for the Colonies. Later held several posts in private companies, including one webb expanded metal company. Was called to the bar Middle Temple, in June, 1902. Joined Perry & Company in 1913 and am now senior partner. The firm holds royal warrant of appointment, etc., and was founded in 1756.

Wason served throughout the South African War with the Cycle Section of the City Imperial Volunteers and won the medal with four clasps and also the Territorial efficiency medal. He is a member of the Reform Club and the Albermarle Club, London, of both of which he has served on the governing committee; Reform Club, Liverpool, Turnberry Golf Club, etc. He is prominent in Masonic bodies. At present he is Justice of the Peace for the county of Ayr, Scotland. He has published "Some Volunteer Verse—in Peace and War."—William C. Whiston is an electrical engineer with the Public Service Commission, First District, at 154 Nassau street, New York City, his home address being 407 Ocean avenue, Brooklyn, New York.

In 1895 I went to Pittsburgh and Buffalo with the American Telephone & Telegraph Company. In 1898 went to Alabama, Pittsburgh, and parts of New York City with the Kitson Hydro Carbon Heating & Incandescent Lighting Company. In 1900 was in New York City with the Western Electric Company, and in 1901 with the Boston Elevated Railway Company. In 1903 I took up newspaper circulation work and for three years was circulation manager of the New York *Commercial.* I secured my present position with the Public Service Commission of New York in 1907, upon Civil Service examination. The electrical engineer's department of this commission inspects all equipment of electric railways and lighting companies to see that they are properly maintained, passes on new car equipment, equipment of the city's subways, etc., makes appraisals for bond issues, rate making, etc., and investigates accidents, complaints, etc., involving equipment.

Whiston married June 15, 1907, Miss Emma B. Lowenthal, and they have one son. He is a member of the American Institute of Electrical Engineers, the New York Electrical Society, the New York Railroad Club, the Technology Club of New York, Delta

Upsilon Fraternity, and the Royal Arcanum.—Lawrence J. Webster resides at Holderness, N. H. He married in 1901 Miss Alice May Rogers, and they have one son.—Edward L. Wingate is superintendent of the G. W. & F. Smith Iron Company, Gerard street, Boston, his home address being 85 Dexter street, Malden, Mass. He married in 1902 Miss Abbie Copeland Corbett, and they have two sons. Wingate is a member of the Boston Athletic Association, the military order of the Loyal Legion, and Sons of the American Revolution, and Masonic fraternity. For fourteen years he served in the First Corps of Cadets, M. V. M.—Osvaldo Augusto Ycaza is engaged in the banking business as sub-manager of the Panama Banking Company at Colon, his home address being post office box 132, Panama, Republic of Panama. He married in 1900, Miss Elisa Vasques y Tinoco, and they have four children, three daughters and one son. Ycaza has held the positions of cashier of the "Banco Colombiano," Guatemala; consul of the Republic of Panama in Guatemala; special delegate sent by the Panama Government to the inauguration of the Northern Railroad of Guatemala; delegate for the Panama Government to ascertain with American delegates the correctness of presidential elections in 1907; official surveyor for the Province of Cocle, Panama, and also for the Province of Panama. He was a founder and during 1913 president of the "Sociedad Nacional de Ingenieres, Arquitictos y agrimensores," Republic of Panama. He has in preparation a book on "New Devices for Flying Machines."

1894.

S. C. Prescott, *Sec.*, Mass. Inst. of Tech., Boston, Mass.

The class seems to be especially well represented on the instructing staff and Faculty of the Institute. Five of our members are now on the Faculty: G. B. Haven in machine design; H. W. Gardner in architecture; J. W. Phelan in inorganic chemistry; R. S. Weston in public health engineering; and the secretary in industrial microbiology; S. A. Breed is instructor in drawing. Besides these men T. G. Richards and H. E. Warren are lecturers on special engineering subjects. H. O. Lacount is a lecturer at Harvard, and some of the students taking work at both Technology and Harvard listen to his admirable presentation of his subject of fire prevention. Incidentally we have other professors on our rolls, for H. B. Dates is professor of electrical engineering at Case School of Applied Science at Cleveland, F. P. McKibben, professor of civil engineering at Lehigh; H. C. McGoodwin, professor of architecture at Carnegie Tech, and F. M. Mann, professor of architecture at the University of Minnesota. There may be others.—H. N. Parker has resigned as instructor in city milk supply and dairy bacteriology at the University of Illinois and is at present engaged in the preparation of a book dealing with the

subject of city milk supplies and their control. He is spending the winter in Boston. He recently spoke on this subject before the class in industrial microbiology at the Institute. Having had a long experience as a health officer in Montclair, N. J., as well as much experience in government work before going to Illinois two years ago to specialize in teaching in this field, he is especially well acquainted with the problems and incidentally with the large plants throughout the eastern and central part of the country.—Another of our men who enjoys the title of professor although not actually engaged in teaching is C. G. Abbot. He is also one of the most travelled men in the class as his scientific explorations of the radiant energy of the sun has taken him to northern Africa, Mexico, the East Indies and many other parts of the globe outside the United States. During the summer he went to Australia to present a paper on his researches before the British Association for the Advancement of Science, and he has also addressed learned bodies in various European countries as well as in all parts of America. The work of Abbot and Fowle, both course VIII, '94, probably constitutes the most conspicuous contribution to pure science that the class has made, and both men have international reputations.—George Owen achieved fame as the designer of one of the boats developed during the year 1914 for the America's cup. He is now engaged in supervising the construction of a special ship which the Bath Iron Works is building from his designs for the United States navy and which is to be used in torpedo testing. Probably he and Guy Lowell became the most widely-known members of the class during the year, for both were frequently mentioned in the newspapers and Lowell gained great reputation for his success in the design of the circular court house for New York, which was accepted in a competition with a large number of the most prominent architects not only in the metropolis but elsewhere. Lowell spends most of his time in New York where he has an office and maintains a large corps of well-trained men.—H. B. Russell, who was with the class for two years, is an architect with offices at 9 Park street, Boston. Meeting him recently, the secretary learned that Russell has been very successful professionally. He has spent much time in Europe, especially in Italy and France in architectural pursuits. Russell married Miss Douglas, a daughter of former Governor W. L. Douglas of Brockton and has two sons.—H. A. Swanton is constantly developing his place at Westport, Me., into a scientific farm. Any member of the class interested in intensive agriculture, either as a profession or a hobby, would find the experiences of Swanton most interesting. Incidentally, he says that his training at Tech is of the greatest value in his present work.—The nomination of King as a term member of the Corporation is a well-deserved compliment to his loyalty and ability. He has been most successful in his profession in New York, as assistant corporation council in charge of taxa-

tion. He has also served as president of the federated Technology Clubs and of the Tech Club of New York most acceptably, and as vice-president of the Alumni Association. If all alumni knew King as '94 men do there could be no question of his election by a rousing vote.—George Taylor has moved his business, The Taylor Machine Company, to 8 Oliver street, the original location.—W. H. Bovey is a director and general manager of the Washburn Crosby Mills of Minneapolis. He is also interested in all kinds of good things in his home city. Bovey has a son at Andover who will probably be a Tech man eventually although he is likely to go to college first. Occasional parental visits have given some of the '94 men near Boston an opportunity to meet Bovey from time to time, and it is hoped that these pleasant meetings may be increased. If a few days' notice could be given the secretary would be glad to arrange for a '94 luncheon party with the men in the city whenever any of the class from distant parts show up in Boston.—Claflin is secretary of the New England section of the Society of Chemical Industry. He recently presided with wit and grace at a large joint meeting of this society and the northeastern section of the American Chemical Society. As a manufacturer and dealer in chemicals, Claflin has a wide acquaintance. He also has a son at Andover.—H. M. Chase is president of the National Wood Products Company of Wilmington, N. C. He writes that "he hopes to get to Boston sometime but that walking is bad in his locality." He will certainly get a prodigal son welcome when he comes.—Ninety-four has a rubber quintet that is hard to beat.—Piper and Price are directors of the United States Rubber Company, Price being a vice-president. He also is at the head of the huge research laboratory of the company in New York. Piper is still connected with the Boston Rubber Shoe Company with his headquarters in Malden. He reports spending a few days with Price on the latter's yacht last summer.—Sherman is in charge of a division of the Diamond Rubber Company at Akron, Ohio.—Richards is president of the B. & R. Rubber Company of North Brookfield, Mass., and Adams is with the Boston Belting Company as he has been for twenty years.

The secretary regrets that the class has been so scantily represented in the last two issues of the REVIEW but offers as his excuse his absence during the months of June, July, August and September until the opening of the Institute. He spent the whole summer in Central America on some investigation work, establishing a laboratory in Costa Rica for the study of some problems in agricultural microbiology for the United Fruit Company. In following up this work he had some interesting and wildly exciting experiences in Costa Rica, Honduras, Nicaragua and Panama, sailed through the Culebra cut, rode a mule through miles of jungle and more miles of bananas, and took a voyage on what he firmly believes to be the worst steamer in the world. He lived for five

days on seven hard-boiled and not too fresh eggs and a few crackers, and slept (or tried to sleep) on deck when thunder showers would permit, generally in a rather wet and bedraggled condition. Aside from the loss of a dozen pounds no bad results were experienced, but he is not anxious to repeat the adventure. Life in the tropics is at least as varied as elsewhere, and a trifle more uncertain. He is looking forward to new experiences in 1915. In Honduras he met a gentleman from New Orleans who gave him news of Allison Owen, J. P. Labouisse, and W. G. Blake, all of whom are in business or professional work in that city.

Don't forget that the Technology Clubs Associated meets in Pittsburgh in February. Every man within reach should go and if he has as good a time as we had in Chicago last year it will be worth while.

1896.

CHARLES E. LOCKE, *Sec.*, Mass. Inst. of Tech., Boston, Mass,
J. ARNOLD ROCKWELL, *Asst. Sec.*, 24 Garden Street, Cambridge. Mass.

The secretary learns with regret of the death of Frank H. Rogers. The following notice appeared in the *Boston Transcript* of November 23:

Frank H. Rogers, who died at Wheeling, W. Va., as the result of an accident, was from West Newbury, Mass. He was fatally injured by a falling block of stone while supervising the construction of a Federal building in Wheeling, and died in a hospital there. His mother, Mrs. Charles Henry Rogers, lives in West Newbury, where Mr. Rogers was born, March 23, 1874. Graduating from the Massachusetts Institute of Technology in 1896, he was employed in engineering work for the city of Boston until 1905. Since that time he had been a superintendent of construction for the United States Government, having worked at various times in Cuba, Annapolis, Jackson, Miss., and several cities in New York and Pennsylvania. At the time of his death his home was in Cambridge, O., where he leaves a widow and two-year old daughter. Mrs. Rogers, who was Mary L. Manning of Northfield, Minn., was married to Mr. Rogers in 1907. He is also survived by his mother, a brother, Charles Rogers, and a sister, Mrs. Robert Brown, all of West Newbury, and another sister, Miss Cora Rogers, a teacher of Newton.

Notice has also been received of the death of Mrs. George W. Rolfe, wife of the instructor at Technology, who was Miss Mabel Parker.

Harry Brown reports that he is plugging along with the Edison Company and raising cranberries on the side. The results for the year have been between 500 and 600 barrels of cranberries, and one daughter, Marjorie. The European war affected the price of cranberries so that the profit was about $2.00 per barrel less than formerly.—At the complimentary dinner to Professor Richards at the Copley Plaza, on December 7, the seating was by classes, and the following members of '96 were present: Dr. J. A. Rockwell, Ben Hurd, H. D. Jackson, Joe Knight, and the secretary. Bradley Stoughton was expected from New York but was unable to come.

Attention of the class members is called to the convocation of Technology Clubs Associated in Pittsburgh on February 19 and 20. Big preparations are being made for the event and it is hoped that '96 will make a good showing.

Edison Life for November contains a cut and sketch regarding E. S. Mansfield. It will be recalled that "Eddy" took hold of the development of the electric vehicle for the Edison Company, and having worked the department up to a satisfactory basis, he has recently been promoted to take charge of a newly created office in the operating bureau. He bears the title of "Superintendent of Operating Bureau Accounts."

Address Changes

Changes of address have been received as follows: Addison, Mrs. Daniel D., 1789 Beacon St., Brookline, Mass.—Bakenhus, Reuben E., Public Works Offices, Navy Yard, Boston, Mass.—Blodgett, Kinsley, 2 Downing St., Worcester, Mass.—Dupee, Jas. A., 12 Monadnock St., Dorchester, Mass.—Freedman, Louis A., 38 Broad St., New York, N. Y.—Hewins, G. S., 715 High St., Dedham, Mass.—Hodges, Arthur W., 817 Walnut St., Newton Centre, Mass.—Jameson, Minor S., care of Public Service Commission, 1 Beacon St., Boston, Mass.

1897.

JOHN A. COLLINS, JR., *Sec.*, 67 Thorndyke Street, Lawrence, Mass.

The *Christian Science Monitor* had the following account of the paper read by Walter Humphreys at the Association of Alumni Secretaries held in New York, November 19:

"Registrar Walter Humphreys, of the Massachusetts Institute of Technology, addressed the meeting of the Association of Alumni Secretaries. The association, which is to meet during three days in the Journalism building at Columbia University, is composed of the secretaries of the various alumni associations, and the address of Mr. Humphreys was on 'How our associations can best serve the alumni themselves.'

"The paper was a leaf out of the experience of the Tech Alumni Association of which Mr. Humphreys is secretary. This association is of forty years' standing and was at first a formal organization with an annual meeting, its general purpose being to help the Institute. There was then formed an association of the secretaries of the different classes. To this association is due the TECHNOLOGY REVIEW, and the all-Technology reunion at five-year intervals. The next step was an arrangement whereby members of the Corporation are nominated by the vote of alumni, and fifteen such members, three new ones every year for five-year terms, are now in the Corporation.

"The Alumni Association, uniting the two earlier groups, has

awakened interest so that local associations are now to be found in all prominent centers of the country, and number about 50, and these again have federated themselves and have an annual meeting, this year in Pittsburgh and next year in Boston. The Alumni Association further has appointed a field manager, who is also editor of the REVIEW, one of the important means of keeping the alumni in touch with one another and with their alma mater.

"Incidentally the Alumni Association has been of benefit to the Institute itself through the Alumni Council. This body, meeting once a month in the school season, formulates lines of progress which seem from the business or the technical point of view to be in keeping with the times. This brings to bear on every problem of importance the experience of men who are in the midst of the business world."

News has just been received of the death on November 15 of Carl J. Dietrich at Hartford, Conn. He leaves a wife and two boys. Mr. Dietrich was a Course IV man and in addition to his architectural work he devoted much time to painting both in water colors and oil. He had exhibited his productions at the Philadelphia Art Club, Connecticut State Building, Louisiana Purchase Exposition, St. Louis 1904, Boston Art Club, New York Water Color Club, American Water Color Society, and at the Connecticut Academy of Fine Arts.

The deepest sympathy of the class personally and collectively is hereby extended to Mrs. Dietrich and her two boys.

1898.

A. A. BLANCHARD, *Sec.*, M.I.T., Boston, Mass.

Ninety-eight men! don't forget the convention of the Technology Clubs Associated in Pittsburgh, February 19–20. All who can go may rest assured that the Pittsburgh crowd will see that they are well repaid for their loyalty in coming. Ninety-eight had the record attendance at the New York convention two years ago. Perhaps we can make as good a record at Pittsburgh for a number of our men live within easy reach. F. L. Bishop, A. L. Davis, C. F. Drake, W. C. Fownes, and H. R. Thayer are located in the city.

E. F. Russ recently went into business for himself under the name of the E. F. Russ Company, Importers of Hide Cuttings, which are principally used in paper mills. He is also interested in the Glue Specialties Company, which handles glue and is also the New England representative of the United States Sand Paper Company. His offices are at 201 Devonshire street, Boston, Mass. —Frederick M. Kendall has opened an office, Room 73, 45 Bromfield street, Boston, for general architectural practice.—George R. Wadsworth has moved to 37 Philbrick road, Brookline, Mass.—

The following interesting item is taken from a letter from V. R. Lansingh:

I guess I had better give you my change of address, and change of business. I have left the illuminating business, and I am now secretary and treasurer of the Hardware Buyers Association, located at 14 East Jackson Boulevard, Chicago. The endeavor of our organization is to unite a large number of stores in their purchases, similar to the scheme of the Rexall people in the drug business.

1899.

W. MALCOLM CORSE, *Sec.*, 106 Morris Avenue, Buffalo, N. Y.

The reunion committee has gone over the situation relating to the time and place of our next class reunion and has decided that it would be better to postpone it until such a time as will coincide with the All-Technology reunion. This has been indefinitely postponed so that a definite announcement relative to our own reunion cannot be made at this time.

Miles Sherrill is chairman of the committee and is being ably seconded by Ben Hinckley in the arrangements to use Marshfield as a place of meeting. Both Sherrill and Hinckley have summer homes at Marshfield, which they will put at the disposal of the class. Everything points toward a very successful meeting when a final date is set.

W. O. Sawtelle has announced the birth of a daughter, Janet, on December 30.

1900.

WILLIAM R. HURD, 2d. RICHARD WASTCOAT.
PERCY R. ZIEGLER.
INGERSOLL BOWDITCH, *Sec.*, 111 Devonshire Street, Boston, Mass.

There is one saying namely "that it's hard work to get blood out of a stone," that as far as it applies to this class should read, "that it's hard work to get news out of 1900 men."

On December 4, forty-five of the following requests were sent to forty-five men in the eastern and southern part of the United States. To date, namely, December 16, only fourteen replies were received, or 33⅓ per cent. Included with the request was a returned stamped envelope. All that was necessary to be provided, was a lead pencil, and an answer. The other 66⅔ per cent of the men lacked either one or all of the following: 1st: lead pencil; 2d: an answer (no answer showing that they knew nothing, or have been doing nothing; either need immediate attention on some one's part); 3d: the energy or ambition to work their fingers, and brain (?) matter; 4th: the ordinary business courtesy of a reply to a communication which entailed no expense on the recipient, because lead pencils can be borrowed or stolen; 5th: which is allowable, being a member of the secret service or a detective; 6th: Dead; in

which case you should have informed us and the next request will be sent in an asbestos envelope.

All requests were sent in return envelopes, and the ones returned on account of wrong addresses were reckoned in with the replies.

This was the request:

Problem.—To write the news of the class of 1900 M. I. T. for the TECHNOLOGY REVIEW, and have the same in the editor's hands by December 10.

Known.—That the news must be furnished by members of the class, either about themselves, their work, what they know, or think they know, or about some other classmate (either truth or untruths accepted).

Unknown.—What the result of this appeal will be.

Material Furnished.—Paper and return stamped envelope.

Material to be Furnished.—Pencil and answer.

P. S. If you don't take the TECHNOLOGY REVIEW, write the Alumni Association to send you copy.

In the name of Allah we beseech you to write your reply below and return at once. Get Busy!

Behold the following replies from the live ones:

From Maxfield in Florence, N. J.:

Not much news here. Lots of work to do, but little business resulting. Have recently joined the A. S. M. E. Have the problem of mining a plant at competition prices and only half enough work to keep it busy.

This is a long one from Sanders in Akron, Ohio. Don't believe he even goes to the movies:

No news, scandal, or gossip.

From Dean, who is still with the Navy Department at Washington:

I am still busy with electrical matters on shipboard much of which is interesting and novel but of course I am not permitted to divulge the nature of these improvements. I frequently see Gallagher (Course VI) who is very interesting to talk with in view of his varied experiences in Europe in connection with the interests of the Lake Submarine Torpedo Boat Company of Bridgeport, Ct.

—This letter from Cayvan in Grand Rapids is something like it. One who will come across with an answer like this deserves success:

Such an earnest appeal is worth replying to.—It is the same old grind:—Making crackers and cakes with high priced materials (war prices) is decidedly no fun. And our products have not been advanced in price one cent. Maybe we aren't applying "efficiency methods" now! But we are not calamity howlers—business is *fine!* Am waiting for ice to show up on our lake—we want some ice-boating *badly!* And then we long for summer so to go canoeing and camping and canoe sailing on our river here—and then it's the vacation to look for next—M. I. T., Boston, June 1915. *Everybody* ought to get there! After going to Chicago last February I'll never miss another meeting if I can help it.

Music is my hobby; I try to do what I can towards the education of this town to music—have a string quartet in which I play 'cello and we play none but the best of musical literature—so far the music critics have let us down easy. Am playing bass in a small orchestra in which our much esteemed classmate Tom

Perry is playing 1st flute. By the way, there's the best fellow in this town, take that from me, and he's got some dandy little family, too!

Lew Cody of '92 is here, too. A short time ago Arthur Farwell, '92, a roommate of Cody's passed through here. Farwell is undoubtedly America's leading musical composer.

Johnson probably doesn't realize the honor thrust upon him in being classed as a 1900 man.

Results:—

1. I didn't graduate until *1905*.
2. Couldn't find pencil. Am using pen.
3. Am associate geologist on United States Geological Survey. Spent last summer examining mineral resources of the Valdez district, Alaska. Will spend this winter in Washington, D. C., writing report.
4. Expect the above information is of no use to you because I'm not in 1900 M. I. T. Moreover it isn't news, it's facts.
5. Do you want a pencil furnished with the answer??? What's going to be done with the pencils furnished?

—Have forgotten where we sent the request for news to Hamlin but the book says Augusta, Maine:

The fact that I received your appeal proves that you have my correct address; the fact that I am answering this proves that I'm alive. While this letter may not be of particular interest to the readers of the TECHNOLOGY REVIEW, it may serve as datum on which to base averages, etc.

—"Here's to many more replies," so Osgood heads his reply:

Am putting in my second winter in Worcester, Mass., as plants engineer for the Norton Company. Have interested myself, since being here, in several new projects for the company, such as new buildings, alterations and additions to power plant, water supply, safety appliances, dust removal systems, housing problem and workingmen's homes, garden city planning, etc. In the way of outside amusements, have found time for baseball, tennis, golf, bowling and dancing, preferring golf and bowling in season to any of the other forms of sport. Witnessed the world series games in Boston.

—Washington, D. C., the residence of government officials and democrats (small d) comes across with another reply, from a member of the first classification, Southworth:

If I could, I would invent a startling career and write you about it, but my imagination is not working well this morning; so I will confine myself to facts. I am with the Bureau of Yards and Docks, Navy Department, in charge of the architectural work. I have had an unusual opportunity, and have taken it, to specialize in hospital architecture for in addition to other work I have been in charge of the planning of hospitals for the navy department, from Hawaii to New Hampshire.

—We would have liked to hear more from Welbourn down in Baltimore:

I am sorry I am not in a position to give you some news regarding the class of 1900. I am very seldom in Boston, and have not been there for some years. Therefore, I have entirely lost track of our class, and have not seen a member of it for so long that I don't think I would recognize one if I met him.

—This will put Manley wise. He'd better look out; his wife opens his letters:

This urgent appeal has come too late for you to receive a reply by December tenth, but Mr. Manley will try to respond the next time you need help. He has gone to New York and I am writing for him to assure you that he is not indifferent to your distress.

—Collier in Atlanta knows what's wanted when a request for news comes to him. If only one half of the others would do one half as well, the 1900 class news would be the best part of the REVIEW. But be careful you who write him, for his reply starts "Address all communications to the Company," and he as well as some others will have his little joke about "the pencil":

Your communication of December 4 came to my desk while I was out of the city, therefore this is the first chance that I have had to answer it. I do not know that I can give you any very interesting information regarding the men of the class of 1900 on account of the fact that I see really very few M. I. T. men here in the South. Regarding myself, beg to say that at present I am connected with the Public Utility Companies here in Atlanta. My duties really cover the sales end of the business and are somewhat numerous. I am sales manager of the Georgia Railway and Power Company, sales manager of the Atlanta Gas Light Company, manager of the Carrollton Electric Company, Carrollton, Ga., and manager of the Suburban Gas and Electric Company, Decatur, Georgia. The last two named companies are subsidiary companies to the Georgia Railway and Power Company, the stock being owned by the Georgia Railway and Power Company. As revealed in the information that I gave for the history that was published in 1910, I am married and have two children, both of them girls. As to my favorite sport I would say that it is extremely hard for me to decide between automobiling and drawing my salary but I think that the advantage is in the latter. I have written no books, published no articles, had no photographs taken, held no prominent political or religious offices, made no wonderful speeches or been intoxicated since the last report. I hope to break away from this monotonous routine shortly and trust that when I break away that I may at least be in the company of some good M. I. T. 1900 man. Regarding the news of other 1900 men, would say that I hear once in a while from Steve P. Brown, Course II, who is now chief engineer for McKenzie, Mann & Company, Montreal, Canada, on the construction of the large tunnel in Montreal. Brown is doing wonderfully well in his work, has some ten or twelve titles following his name, a wife and two children. This is the crop. If you can get anything out of it you are perfectly welcome to it. I note in the letter that you sent to me, you said the material to be furnished would be a pencil and an answer. The above can be taken as the answer but I swear that I will not send you the pencil and cannot understand why it is that you are trying to make a collection of pencils from the 1900 men.

—A request for news was sent to the secretary and all the reply from him was that he had bought a new Franklin automobile. We wonder how he dared. He must have faith that the hot air cooling device is at least 150 per cent efficient.

Not a pencil returned.

At the complimentary dinner given to Professor Richards at the Copley Plaza on December 7, Bugbee, Batcheller and Bowditch were present. It was a very pleasant affair. Stories were told concerning Professor Richards' kindness to students and about his work at Tech.

Neall received the following from Mead:

I too have suddenly decided to come into the ranks. Will be married Sunday to Miss Elsie Louise Talbot in Middlebury, Conn. Wish I might see you before

but as the matter was decided only day before yesterday, I am somewhat busy. It will be a great pleasure to me to have the future Mrs. Mead and myself meet Mrs. Neall, and I hope really soon.

1901.

ROBERT L. WILLIAMS, *Sec.*, 8 Lake Street, Brighton, Mass.

T. F. Lange as assistant engineer for the New York Central & Hudson River Railroad Company had charge of the track construction and third rail work at the Grand Central Terminal, New York.—F. E. Cady is assistant to the director of the Nela Research Laboratory of the National Lamp Works of the General Electric Company. His work is both experimental and administrative, the experimental work being principally in photometry. He writes:

> We are located in our new laboratory building which is one of the finest we think in the country devoted to research. We are nine miles from the center of Cleveland on a hill with a view of Lake Erie in the distance.

—W. J. Heimitz was stationed one year at East Chicago constructing the new $1,000,000 power house which was erected and placed in operation in five months. He has been superintending electrical work at Morristown, Pa., since then. He is engineer for the United Gas Improvement Company of Philadelphia.—H. W. Chambers is supervisor of wage schedules for the New York Central Lines. He was married in 1904 and has two children.—W. S. Blauvelt is with the engineering department of the American Telephone & Telegraph Company and is located in New York City.—C. G. Tufts as chemical engineer for the Semet-Solvay Company of Syracuse, New York, does considerable traveling. He writes:

> About fifty per cent. of my time is spent at various coke oven plants, ranging from Milwaukee on the North to Chicago and Indianapolis on the West and Tuscaloosa, Alabama, on the South. The work has included a business trip to Belgium, England and Germany.

—C. F. F. Campbell was in London last summer and while there his father, Sir Francis Campbell, the blind founder of the Royal Normal College for the Blind in London, passed away at 82 years of age. Our classmate had the honor of being the only American asked a year in advance to go to London to present a paper to the International Conference of Workers for the Blind upon recent work for the blind in America.—F. W. Clafin in his position of engineer of construction for the Cambria works of the Cambria Steel Company, Johnstown, Pa., has had charge of the installation of a 6,000 K. W. Turbo generator and the rebuilding of a blast furnace. —H. V. Allen is assistant engineer of light and power for the department of water supply, gas and electricity for the city of New York.—W. W. De Berard is located in Chicago and is the Western editor of the *Engineering Record*.—R. B. Clark is a real estate broker specializing in suburban properties in the environs of Phil-

adelphia. He says business is "rotten" but he is getting fat tipping the beam at two hundred.—L. du Pont is general superintendent of the manufacturing department of black powder of E. I. du Pont de Nemours Powder Company. Business ought to be good with him these days.—H. E. Hildreth is junior partner of the firm of Hildreth Brothers, manufacturers of woodworking machinery. He is secretary of the Cosmopolitan Trust Company of Boston, and a director of the Waltham Watch Company. He resides in Harvard, Mass.—Ellis F. Lawrence has been made a fellow of the American Institute of Architects. Aside from his work as an architect in Portland, Oregon, he is running a forty-acre apple ranch in Hood River.—J. R. Putnam, mechanical engineer for the Waterbury Clock Company, has become a member of the American Society of Mechanical Engineers.

1902.

F. H. Hunter, *Sec.*, 281 Park Street, West Roxbury, Mass.
J. Albert Robinson, *Asst. Sec.*, care Underwriters' Bureau of New England, 141 Milk Street, Boston, Mass.

In the last issue of the Review we chronicled a heavy blow to our famous phalanx of "Handsome Bachelors" in the marriage of Cecil Annett, and again we have to record another raid upon the thinning ranks of this notorious organization—Donald Belcher is engaged! The prospective Mrs. Belcher is Miss Katherine Elizabeth Edgett of Winchester, Mass.—Charlie Wright is now located at Andover, Conn.—Herbert Walker is at the College of Hawaii at Honolulu.—Charlie Shedd was married on August 5, last, to Miss Clara L. Jones of Hillsboro Bridge, New Hampshire. Charlie is now located with Allen & Collens, Architects, at 40 Central street, Boston. He has charge of the structural engineering for this firm and also carries on his own practice in that line.—Adrian Sawyer is in charge of the construction of the new central dormitory at Wellesley College. This building is the first of a group of three dormitories that are to crown College Hill, where the great College Hall stood before the fire of last spring. The first thing that Sawyer had to do was to remove the walls of the old building, and the brick from ruins are to be used in the new work.—From the Pacific Coast comes news of a new tractor designed by Paul Weeks of Los Angeles for use especially in the orchards of California. The machine is unusually compact and can make the short turns and do the close work required in orchards where the usual type of traction motor would be too cumberous to handle. It will do the work of six horses, and except for the motor and ignition system, it is all manufactured in Paul's own city.—In the recent elections Charlie McCarthy was chosen assessor of Clark County, Nevada, by a majority of nearly two to one. Mac was the only Republican

on the county ticket to get by, and when we consider that Clark County is big enough to make a state here in New England just by itself, we take off our hat to the new assessor.—On September 1 Frank Montgomery hung out his shingle as a consulting engineer for fire insurance with an office at 93–95 Nassau street, New York City.—Bert Haskell was married on September 16 last to Miss Margaret Leslie Wetherston of Providence, R. I., at the home of the bride's mother, Mrs. Mary Forsythe Wetherston.—On the 1st of January the class secretary severed his connection with the L. D. Willcutt & Sons Company where he has been for the past two years, and embarks as an independent estimator for building work.

The forthcoming reunion of the Technology Clubs Associated to be held, as announced in the last issue of the REVIEW, will be a fine chance for a lot of classmates who have been prevented by distance from attending the previous reunions to get together at Pittsburgh on February 19–20 for a *Big Tech Time*. The Pittsburgh association is developing plans for a most enjoyable series of events, and only a large attendance is needed to make the affair a grand success, even as the previous meetings in New York and Chicago have been. Hutchinson (John A. Hutchinson, 605 Mulberry avenue, Sewickley, Pa.) has been asked to represent '02 on the spot, and the other classmates in the Smoky City will second his efforts to make things lively for all the '02 men who attend.

News has been received of the death of two classmates during the past summer,—Frederick O. Miller died at his home in Cincinnati on July 10. For several years past he had been connected with the Western Union Telegraph Company and held the position of chief clerk of their Cincinnati office.—John Bice Turner was killed by an automobile in St. Louis on June 2. A rumor to this effect was received some time since, but till last week no certain confirmation was obtained in spite of several efforts. Turner was a successful contractor, handling large work in his home city, especially in paving and grading work.

1903.

M. H. CLARK, *Sec.*, 1790 Broadway, New York.
R. H. NUTTER, *Asst. Sec.*, Box 272, Lynn, Mass.

Robert Marsh, an "insurgent" member of the city council of Springfield, Mass., has been induced to offer himself again as a candidate for the Republican nomination by those who realize what good work he has been doing for the city, although he had almost decided that three years was enough for him. Councilman Marsh has made a good record, even to the extent of saving the city $10,000 on one improvement, and has shown that he had the interests of the city at heart.—Frank Montgomery is a consulting engineer, specializing on fire protection, with offices at 93–95

Nassau street, New York, and at 15 Clinton street, Newark, N. J.

There will be a convention of the Technology Clubs Associated in Pittsburgh, February 19 and 20, and it is hoped that a number of '03 men will make an effort to be present.

The engineering features of the extensive alterations and additions in progress at the Glenwood Mission Inn at Riverside, for which Myron Hunt of Los Angeles is the architect are in charge of Rolf R. Newman, C. E., of Riverside. Mr. Newman is a Boston Tech man and has specialized in concrete construction. In recognition of several articles contributed by him from time to time to cement literature, he has been made a member of the board of associate editors of *Concrete-Cement Age*, published in Detroit.

Address Changes

I. F. Atwood, 60 E. Emerson St., Melrose, Mass.—Joseph W. Aylsworth, care of W. C. K. & Company, 37 Wall St., New York, N. Y.—Horace S. Baker, 6657 Greenview Ave., Chicago, Ill.—Carl T. Bilyea, Barrett Manufacturing Company, 1205 Land D Title Bldg., Philadelphia, Pa.—Miss Katharine Blunt, University of Chicago, Chicago, Ill.—Myron H. Clark, 1790 Broadway, New York, N. Y.—Miss Harriet V. Elliott, Dorchester High School, Dorchester, Mass.—Daniel W. Field, 185 Essex St., Boston, Mass.—William A. Harrigan, 127 Magnolia St., Dorchester, Mass.—Albert A. Haskell, 172 Gallatin St., Providence, R. I.—Raymond Haskell, Lt. House Estab't, Tompkinsville, N. Y.—Mellen C. M. Hatch, Delaware, Lackawanna & Western R. R., Scranton, Pa.—Gordon W. Stearns, care of Fred O. Woodruff & Company, 95 Milk St., Boston, Mass.

1904.

HENRY W. STEVENS, *Sec.*, 39 Boylston Street, Boston, Mass.
AMASA M. HOLCOMBE, *Asst. Sec.*, 510 Pine Street, St. Louis, Mo.

News for this issue seems even more scarce than for the last issue, and the reason may be because the two issues came so close together, or it may be because there is no news. The secretary has managed to glean a few interesting items, and offers them for the information of the class.—Eugene H. Russell, Jr., is now in the insurance business and is located in Boston, as special agent in the Life and Accident Department of the Travelers' Insurance Company.—"Cy" Ferris is now a happy father, his son Hamilton Yale Ferris being born on October 8, 1914. The secretary presents the best wishes of the class to the young man as he starts his way through life.—On November 18, 1914, the class of '04 with its neighboring classes from "02" to "12" gathered at luncheon at the City Club for the purpose of congratulating our official representative in Technology affairs, Mert Emerson, upon his appearance in the list of candidates for nomination as a term

member of the Corporation of the Institute. President Whiting, of the Alumni Association, was present, and as he was also in the list of candidates, the luncheon was a double tribute. There were thirty-eight present and a most enjoyable hour was spent. Those from this class were: Galusha, E. H. Russel, Jr., Parker, Ferris, Rockwood, Gunn and the secretary. Emerson is the first member of the younger classes to be considered for such honor, and the class feels itself honored indeed.

Our versatile member, "Volts" Ovington, erstwhile high frequency expert, motorcycle king, and aviator, has blossomed out in a totally new line of work, that of chicken-raiser and "bug" cultivator. With his characteristic energy he is pursuing these subjects along absolutely new lines, as the following extract taken from an article in a recent issue of the Boston *Sunday Herald* will show. The first portion of the article deals with his exploits in aviation, which are too well known to need repetition here, and goes on to describe how he came to take up his present occupation, as follows:

A few years ago Earle L. Ovington was cutting curleycues in the air and sending cold shivers of delicious apprehension down the backs of multitudes of onlookers. Today he is cultivating germs in a Newton laboratory and raising chickens at Oak Hill. He is still interested in aëronautics. But just now he lets his hens fly for him. And at that Ovington does not propose to be an ordinary manager of an ordinary chicken farm. He has a particular aversion to doing endless chores in the old-fashioned hand-toil way. It is not because he is lazy, he says, but because he has a very high appreciation of the value of time. So he intends to apply the push-button system, which saves hours of time and quantities of drudgery in his home and his laboratory, to the operation of his chicken and egg plant. To that end he has devised schemes curious and sundry as follows:

The reduction of the mortality of infant chicks from about 40 per cent. to zero by the use of the bacillus which was popularized for the world of people by Metchnikoff, on the theory that what has kept men alive and lengthened their years will help hens to fight off their foes as well.

A photographic record, kept by the hens themselves, showing just how many eggs they lay a day, thus eliminating the nuisance of the ordinary trap nest.

A coil suspended in the chicken house which mixes by the force of gravity the chicken feed once the delivery man deposits the wheat, corn and oats in the proper receptacles, thus getting rid of the unpleasant job of mixing with a spade.

A watering basin, so suspended that it turns over automatically, is always clean, never freezes, and keeps a constant supply of fresh water at hand.

And an adaptation of the vacuum cleaner to the quick and complete cleaning of the chicken premises.

He himself laughs at the ideas as he describes them, but declares that he will have a thousand chickens on his farm next spring and that these and other inventions will then be in practical use there. And to hear him tell the whole story of the last four years or so of his life, all the time bringing in references and applications to his "Lab" and his "chicks" is an amusing experience from which one emerges with the notion that he may after all have found the answer to the old poser which he states thus:

"Why is it that almost anyone can keep chickens in a small way and make it pay, and yet very, very few can keep them in large numbers and not lose money?"

It's just the confidence born of his successful realization of his sky dreams that makes him sure of success in his "advanced" chicken raising enterprises.

It seems that when he went to Europe that the great monoplanists and biplanists might aid him to realize his aviation schemes, he was a wreck physically. He had been a hurdler and always was in training, but perhaps he had overdone track athletics. Anyhow, he arrived in Europe with a ruined digestion. There he met a young bacteriologist who interested him in the work of Elie Metchnikoff, and in his six months in France he was made new by the use of the Bacillus Bulgaricus.

Now all this may seem to be another story, as Kipling would say, but as a matter of fact this practical sort of dreamer has made direct application of his Metchnikoff cure in the management of his poultry farm. It was Professor Massol of the Pasteur Institute who introduced him to the Bacillus Bulgaricus. But when he returned home he found it impossible to get here the bacillus which he had taken in Paris, and after his five months of flying he began to go to pieces again. Whereupon he sent across the water for a culture and meantime applied himself night and day to the study of bacteriology. He got every book and article he could find on the subject and equipped a little one-room laboratory. With his former room-mate at Tech assisting him, he pursued his investigations. They found that the Bacillus Bulgaricus had never been grown on solid media, and "when I found a solid medium on which it would grow vigorously, I knew I had discovered something new and valuable," says Ovington. "I carried forward this strain," he continues, "and finally perfected it, and at last I obtained a very vigorous bacillus which would persist and grow in the intestines. Before long I was giving away the culture; then I put it on a commercial basis and now I am lecturing on certain phases of bacteriology before scientific bodies and supplying my culture to physicians. Two years ago I built this concrete laboratory. This is the finest laboratory in the world devoted solely to the production of lactic acid bacilli."

Ovington then went into the chicken enterprise partly because he wanted something to keep him out in the open air. He has not lost the zest for the skies which his aviation days brought him. And this incorrigible experimenter has actually taken the pains to "squirt a little of his Bacillus Bulgaricus culture into the tiny crops of his chicks just as they were taken out of the incubator."

For this dreamer surmised that what had proved to be good for people might also be good for hens, and the hen, being very valuable as the producer of eggs that sell these days when perfectly fresh at 70 cents a dozen, he has not scrupled to treat his feathered proteges with his laboratory product. This is the way he states the case:

"I found that about 30 per cent. of baby chicks die, and often more than half of them. Also that nine of every ten which died, are carried off by some form of intestinal trouble. The thought struck me, and hit me hard, that the bacillus had made a new man of me when I was about all in from digestive disorders, and I have looked up in my safe a quantity of letters from prominent men declaring the benefits they have received under like circumstances from the culture. Why not—? Why not, indeed.

"Well, I did so, and I found that the Bacillus Bulgaricus would kill off the Bacillus Pullorum which caused all the trouble in the digestive apparatus of a chicken.

"And it does it in twenty minutes. I've seen it done under the microscope in that length of time.

"And now I always keep for the first two months of a chicken's life skimmed milk which has been treated with my Bacillus Bulgaricus. I take the Cornell formula for the mixing of feed and make all effort to keep the chickens well."

Now in a nutshell the story of the Ovington chicken range is this:

At Oak Hill he has 12½ acres of land. On May 6 last he hatched his first chickens. He began with 250 and he has never lost a chick from any disease of any kind. A weasel got six and a rat two; of the remaining number 122 were pullets. He sold off the others and now has 62 pullets on the range. He has an electric incubator and from the instant chicks have emerged from it he has taken his tiny syringe and injected the Bulgaricus culture into their crops. This fall he has dreamed out the complete scheme which will be started next season, when he expects to have 3000 chickens in all, from which he will choose about 1000 laying hens.

"My opinion is," says Ovington, "that any dub can make money out of the keeping of a few chickens but that a multitude fail when it comes to keeping them on a large scale, and the reason is simply that the labor cost climbs into figures bigger than the business can stand. Therefore the thing for me to do in order to make a success of my venture is to replace muscle with machinery and reduce the amount of toil.

"There are six principal items of labor about a chicken farm, watering, mixing feed, distributing feed, keeping the premises clean, collecting eggs, and trap-nesting in order to keep the record of each hen. And for each of these I have devised a labor-saving plan, excepting only the collection of the eggs, and this I rate as a pleasure rather than as toil."

To the mixing of feed the principle of potential energy is applied. The old way is to empty quantities of oats, wheat and corn on a clean floor and turn them over and over with a scoop or shovel until they are thoroughly mixed. The Ovington way is to build in the top of the henhouse and midway of its length a sort of hopper with three compartments, into which, respectively, the delivery man will drop the feed he brings. From these separate receptacles the oats, wheat and corn run into a coil of pipe in which they are blended as they slide around and downward, and about the time they are completely mixed they strike the chutes running to the two ends of the chicken house, out of which a supply drops into a delivery trough at each coop. Thus, as by a single operation, mixed feed is delivered to the hens at every point in the henhouse.

The unpleasant task of cleaning the premises will be done by the vacuum apparatus. Figuring that the cost of the labor for this work of cleaning amounts to a considerable sum in the year, the vacuum cleaner is easily figured as a money-saving implement. And to the objection that "You can't take out cornstalks with a vacuum cleaner," Mr. Ovington replies, "Any man who uses cornstalks now is behind the times. The thing to use is powdered peat, and that is what I use." The peat and the litter are taken out with ease by the cleaner.

For supplying water Ovington is confident that he has improved upon the plan of a friend of his who has applied the siphon principle in a long trough. Always at the bottom of the trough there was an accumulating layer of sediment and dirt, and in winter the freezing of the water was an annoyance. Therefore the one-time aviator pivots two cups, one above the other, and has an insulated pipe always dropping water into the upper one. These are placed in all the compartments of the chicken house so that water is always at hand. As the upper cup fills, the equilibrium is disturbed and over it whirls, while the lower cup comes uppermost, and the process is repeated. Thus the problems of cleanliness and freezing are solved at one stroke.

But the device over which one smiles most freely is the recording of the number of eggs laid per pullet by a photographic plan. Heretofore it has been necessary to arrange trap nests in such a way that hens entering them could not escape until they were released by hand, and the chicken farmer was obliged to make the rounds twice daily at least, armed with a notebook, in order to make up the record of each pullet. "This has been the only plan,"

says Ovington, "except the double compartment method, which has not proved satisfactory."

Now the Oak Hill enthusiast has nothing but white Wyandottes on his range. And he paints a numeral upon the wings of each and every one of his chicks, just as they are painted on the wings of other aëroplanes. He admits that it does not add to the beauty of the chickens, but it means that each pullet keeps its own books, so to speak, for in each nest he puts a ribbon of bromide paper stretched on a metal drum.

When the pullet settles into the nest its number is "taken" in photographer's style by the bromide strip. The drum revolves slightly, the next pullet leaves its number, and so on. In the evening these strips are collected; a brief immersion in a bottle "develops" them, and the numbers are entered properly in the books in which each laying hen's record is kept.

So the owner may know what hens to kill and what hens to breed, and he can make pretty close calculations as to the cost per hen, and even per egg of his products.

These numerals will not come off, as black waterproof lacquer is used, and they can be read at some distance.

"What's more," adds Ovington with a grin, "there are mighty few who would care to swipe one of those hens, with their identification marks on them. And the marks can't be scrubbed off. The only way to get rid of them is to let the feathers moult them off."

And thus the aviator, bacteriologist and chicken farmer proposes to occupy his time, He will work inside more than half the day, and the balance of the time he proposes to "potter around my chicken range and what's more to make it pay. It may be I'll get more out of the flying of my pullets than out of my soaring four summers ago," he says.

L. G. Wilson, architect, and Hans von Unwerth, '97, civil engineer, of the University of Kansas, have organized the Estimating Company, with offices in the Finance Building, Kansas City, Mo. The new company will specialize in estimating quantities of material in building operations.

As it has been found advisable to postpone the next All-Technology reunion from June, 1915, until June, 1916, on account of the fact that the new buildings will not be finished, the only big Technology affair this year will be held at Pittsburgh, Pa., on February 19 and 20. Anyone who attended the reunion at Chicago last February will know what to expect and the secretary takes this occasion to urge all those who possibly can do so, to attend the coming reunion at Pittsburgh.

Address Changes

The following changes in addresses have been received: Ralph E. Adams, care of W. M. Drury, Mills Bldg., El Paso, Texas.—

Samuel E. Armstrong, care of N. Y. C. & H. R. R. R., Richland, N. Y.—Albert H. B. Arnold, Overland View Farm, Holliston, Mass.—Louis H. Asbury, Realty Bldg., Charlotte, N. C.—John W. Ayer, Ayer & Cline, Box 314, Birmingham, Ala.—Roland H. Ballou, Manhassett Mfg. Company, 1406 Turk's Head Bldg., Providence, R. I.—Arthur W. Bartlett, 45 No. Maple Ave., Lansdowne, Pa.—Kenneth M. Baum, 40 Clinton St., Newark, N. J.—Albert W. Bee, 7829 Princeton Ave., Chicago, Ill.—Wm. P. Bentley, 113 Martin St., Dallas, Texas.—Frederic A. Biggi, Public Service Commission, Tribune Bldg., New York.— Herman O. Blatt care of Northern Elec. Company, Ltd., Montreal, Canada.—Lyman M. Bourne, care of Double Fabric Tire Company, Auburn, Ind.—Ernest L. Clifford, Mead-Morrison Company, Lafayette, Ind.—Otto Faelton, Bronxville, N. Y.—Grant Ford, O'Neal Hotel, Chisholm, Minn.—Walter J. Gill, Jr., 2 Rector St., New York, N. Y.—R. Stevely Hamilton, Jr., Box 807, Lewiston, Mont.—Geo. B. Harrington, 332 So. Michigan Ave., Room 407, Chicago, Ill.—J. T. McQuaid, 185 Madison Ave., New York, N. Y.—E. F. Parker, 131 Vernon St., Norwood, Mass.—R. S. Phillips, National Retarder Company, Webster City, Iowa—Leon H. Smith, 161 Devonshire St., Boston, Mass.—R. A. Wentworth, 290 Claremont Ave., Montclair, N. J. —G. Neville Wheat, 4139 Michigan Ave., Kansas City, Mo.— Ralph B. Williams, 96 High St., Newburyport Mass.—Edward E. Yeaton, 103 High Rock St., Lynn, Mass.

1905.

GROSVENOR D'W. MARCY, *Sec.*, 246 Summer Street, Boston.
CHARLES W. HAWKES, *Asst. Sec.*, 23 Saxon Road, Newton Highlands, Mass.

By the time this REVIEW is out, each '05 man will have received a blank to be filled out with data for our Ten Year Book. If you have not sent yours in, please do so at once, for the hardest work on a book like this is to get after the ones who do not answer promptly. Any suggestions as to what should go into the book will be welcome.

The secretary made a deliberate experiment in the last issue. It is sometimes so difficult to get news items, that he thought he would test the interest taken in '05 notes by leaving them out once and see what comment was made. The following note, from Ros Davis, and several similar verbal comments look like interest, all right!

It seems to me that the REVIEW must have left out a page of the November number. To be sure, they are numbered consecutively, but there is a terrible void between 632 and 633. Perhaps you arranged for a colored insert (like Omar Cigarettes) but it did not come to me, and the absence of '05 news was keenly felt. Personally, I am sitting tight. Occasional trips to New York furnish some amuse-

ment, but little news. So don't come back at me and say that such as I are responsible for the sad state of affairs.

(As a matter of fact, Ros, the secretary got so absorbed in the interesting job of trying to make a living for a growing family, that he ran by the date of closing without noticing it, and carefully worked up the above as an alibi. Just the same, he is no mind reader, and the only way to make these notes interesting is for the fellows to send in the news, themselves.)

Since our last issue the following notices have been received: Joseph Daniels and Gladys Matilda Fletcher were married in Seattle on July 31. Their address is 5511 University Boulevard, Seattle.—Joseph Henry Brown and Ida Marie Johnson were married on September 19, and are now at home at 414 West 121st street, New York.—Our classmate, Mildred Frances Wheeler married Harold Foss Thompson, on September 26, at Marlboro, Mass.

Two boys and two girls are to be added to the '05 roll:—Robert Anson Steel, born to Mr. and Mrs. Ted Steel, on May 19.—Morgan Pomeroy Wells, to Mr. and Mrs. Albert W. Wells, on June 7th.—Ruth Hardy Burton, to Mr. and Mrs. Eugene Burton on July 22 —and Julia Devereaux Tower, to Mr. and Mrs. Gilbert S. Tower, on July 25.

Roy Allen writes that 'Gene Burton is located at Canon City, Colorado. He bought out a garage and Ford agency, and was keeping seven men busy day and night, which would indicate a reasonably profitable business. In the meantime he is doing some professional mining work. Roy also had a letter from John Glidden, who is superintendent of mines for the Cerro de Pasco Mining Company, Cerro de Pasco, Peru.—Piggy Bartlett has at last been heard from. He says:

So far as I know, I am the only '05 Tech man in Camden. The Philadelphia Tech Club hasn't had a meeting yet, so I have no news. As per Pneuton Pneukirk of the Boston *Post* "News are scairse this week." I know that there is a European war, in spite of living in the environs of Philadelphia. The news leaked out in some way or other.

—Paul M. Paine sends a neat little card saying:

Please note change of address, from Fellows, Calif., to The Honolulu Cons. Oil Company, Taft, Kern County, Calif.

The head of the card says, "The ornaments of a home are the friends that frequent it," so if any of you fellows are out that way, Paul would like to hang you up for an ornament.—C. A. Emerson writes from the Pennsylvania Department of Health, at Harrisburg:

For the last six months I have been on the move more than previously. I was boosted to the position of acting chief engineer, and as we have over ninety employees in our engineering division, I have my hands full. Most of the men are graduates, but I am sorry to say we have but very few Tech men.

—Chester R. Shaw is superintendent of schools at Barrington, R. I.—Al Prescott modestly writes:

For Blowers, Dust Collecting and Exhaust Systems, one reliable concern is the A. W. Banister Company, 421 Dorchester avenue, South Boston, A. G. Prescott, vice-president and manager.

—P. G. Hill writes,

I have left the Chicago office of the Western Union Company. and am now located with that company in New York. Am on the staff of the valuation engineer who is inventorying the physical plant of the Telegraph Company, throughout the United States. Address 195 Broadway, New York.

—Clarence Gage is chief draftsman with the Bucyrus Company, address 598 Russell avenue, Milwaukee. He went down to the Chicago reunion, has a boy of two and a girl of three years, sends regards and wonders why Flynn, Jr., wouldn't write a fellow once in a while.—Gorham Crosby says:

Nothing particularly newsy these dull war times. Have moved my residence from Brooklyn to Glen Ridge, N. J., merely for a change in the breed of mosquitoes. Saw Percy W. Fuller the other day. He informs me he has a bouncing six months old youngster.

(Send us the data, Percy, to get it on the records.—SEC.)—Victor Paquet has left the beloved Pacific Coast to go with the Electric Boat Company, at Groton, Conn.—Bill Spalding is doing efficiency work with Spear & Company, Woodhaven Junction, N. Y.—George Thomas wrote from Podolsk, Russia, last June, as follows:

I am pleased to advise that your breezy literature announcing the class reunion and get-together meeting in Boston on June 9 reached me yesterday, June 20, too late to enable me to make that strenuous effort that you asked for to be present. About a week after the January meeting in Boston I sailed from New York and after spending a month in Scotland and a week in Germany got back here on the job again. As I told you in Boston I intended to look Belding up in London, but as it turned out I had to pass through London in the high gear to make my connections so I wrote Belding and received a reply impressing on me the desirability of stopping off to see him the next time I am in London. I am coming over to the States in two or three months to pick up my family consisting of one boy, three years old, one girl, one year old and one wife, age unknown, but I do not expect to get up to Boston. Mrs. Thomas writes that she forwarded check to cover the class dues and I am going to write her that she is getting too careless with my money in my absence. What's the reason I can't receive my notices direct from you? Perhaps you have forgotten to have my address changed and perhaps you think it necessary to send my notices to Mrs. Thomas for her information and advice or perhaps you thought it easier to hold Mrs. Thomas up for the price of admission. Ordinarily it is easier to touch me than Mrs. Thomas and I don't understand yet how you got away with it unless you went down and had a personal interview with her. Boston in 1915 is out of the question for me. When I get back here with my family I shall have crossed the Atlantic five times in less than a year and I expect I shall be anchored right here in Podolsk for a couple of years.

The bigger and better Russian Technical Schools require their students to work during the summer vacations and we have taken in three of them here. They are called "Practicants" and we are paying them perfectly good money and plenty of it but just why or for what I have not discovered yet. However, I may be able to find out about it later. The only thing I have against the Institute up to date is that no right to wear a gaudy uniform with nice broad stripes on the

trousers and epaulets as big as a small ham on the shoulders goes with our degrees. I have not learned how to tell a Russian engineer from a Russian general yet. However they are a decent lot and willing enough and clever enough, but they do love their uniforms. I am trying to solve the mysteries, or some of them, of the Russian language and it reminds me of the course in theory of elasticity. I am told that it can be learned and there are a few Americans, Englishmen and Scotchmen here who speak something that passes for Russian. Please note my Russian signature, to wit: T. K. Tllowacz (?) Can you beat it?

No, nor pronounce it. Have not heard from George since the war began, so do not know whether they found some striped trousers for him, or whether he escaped in mufti. My reply to him was probably held by the censor, as I offered so sell him an *n*th-hand pair of drill pants.—E. L. Hill has recently accepted a position as consulting engineer and assistant to the management of the Hazard Manufacturing Company, makers of wire rope, insulated wire and power cables, at Wilkes Barre, Penn. Hill has been with the American Steel & Wire Company in Worcester for the past nine years. He was in the engineering department five years and then transferred to the operating department, where for the last four years he has been superintendent of the large insulated wire and power cable plant of that company.—J. H. Tebbetts has gone to Great Falls, Montana, on a large power development with C. T. Main.—The secretary thinks he detects a defensive, almost a defiant note in some communications from the weakening minority of unmarried members. Note this from Bernard Beerman:

No news to give you. Am still single and happy. Good luck and Merry Christmas to you.

—And this from F. G. Bennett:

I appreciate your efforts to get news from the boys for the REVIEW. For myself can say I am well and happy, even if not married. Have changed my address to Staten Island, where I am assisting on the pipe line across the Narrows for Catskill water connection to S. I. 102 Central avenue, Tompkinsville, S. I.

—Same mail brings a perfectly good postcard, saying, "Well. Eugene Lombard." Well, well! How does that help the secretary? You've got to do better than that, 'Gene. Here's a good sample, and a real bear story which has been received from Wm. Seward Mann, technical manager of the Viking Mining Association, Ltd., Cisco, Placer Company, Cal.:

My existence is so commonplace that I hardly know what kind of news items would be of interest. After sprinting ahead of the revolution in Mexico, I went to Honduras, Central America, as mill superintendent for the New York & Honduras Rosario Mining Company, at San Juancito, eight days muleback inland from the coast. After a year with them I resigned to accept the position of superintendent of construction for the Socorro Gold & Silver Mines, Ltd., at Valle de Angeles, about two hours horseback from San Juancito. For this English company I built a modern all-sliming cyanide mill. Last April I left them to come to this place to see if I could solve their metallurgical problem. Four companies have operated the mine, but have failed to extract the values. This has made it especially interesting, but I succeeded quicker than I anticipated, and am building a

mill to treat the ores. I am also treating an old pile of concentrates which has been weathering for thirty years. These have been reported on several times as "untreatable" at a profit. I am averaging 94 per cent. extraction, and expect to recover enough from them to pay for the new mill.

A short time ago I had a bear f(l)ight, which was interesting while it lasted. Our water power slacked up for some unknown reason, and I started up for a trip along the flume line to find the trouble. We have 900 feet of fall on our pressure line, and then 8400 feet of flume. As I turned a sharp corner a short distance from the end of the flume, I found myself face to face with a full grown bear. Usually, a bear, alone, will try to get away, but a bear with a cub will show fight. The cub was below the flume, and the mother above. As I had no weapons, not even a lead pencil to take her dimensions, I immediately set the pace, her bearship traveling above the flume. We were going almost neck and neck when I came to a steep slide of rock which I very gingerly passed over, but the bear stepped on a loose rock, and down she came. She bounced clear over the flume, and sailed down the canyon. I was so pleased to see her go that I stood still and watched, and lost some golden moments. Her Highness passed through several clumps of brush, and finally stopped just short of the river. Then, to my dismay, she started up the short side of an acute triangle, and I was on the longest leg. I have wished since that there might have been a "timekeeper" there. When I passed her, I wasn't twenty feet ahead, and from there on I only hit the high spots. When I reached the end of the flume I went straight ahead and down the canyon, instead of taking the trail, and as the hill has an inclination of 58 degrees, I certainly went some. How I ever stopped at the mill level I really don't know, but I did, and scrambled up to my room and grabbed my 25–35 Winchester. She didn't come. Two days later we caught a 91 pounder in our bear trap. She hauled a log 6 feet long and 12 inches in diameter nearly a mile before it became wedged between two trees. In all we have trapped four and lost one. The one we lost must have been a male and a large one, as it broke the chain and took the trap (19 lbs.) along. We are only twenty minutes from the American River, which is the fisherman's paradise. Tourists come in crowds in July and August. Last June I went down one afternoon in company with an old fisherman, and between 3.30 and 6.30 we caught 27 trout, between us. This is the record for this summer, nearly 10 an hour. My friend caught 26.

P. S. If anyone is looking for bear, deer, game birds or mountain trout, this is the place for him. I have here a 30–30 and a 25–35 Winchester, also one double, barrelled 12 bore and one single-barrelled 16 bore shotgun, all of which any of the fellows would be welcome to use.

There now! If Mann can fill up a sheet or two like that out of a commonplace existence (he says it's commonplace, so commonplace that he doesn't know what kind of items will interest), what excuse have you virile chaps from the Exhilarating East for not overloading a one-cent stamp? (Meanwhile, Mann, send the other items, that you didn't select. We'll work them like your tailings.)

We reprint, with regret, the following notice of the death of Frederick Fraser from the Portsmouth (N. H.) *Times:*

Frederick Fraser, a native of Rye, N. H., died July 7 at his home in California, aged 31 years. Mr. Fraser was the son of Mr. and Mrs. John Fraser of Halifax, N. S. His father was formerly assistant superintendent at the Rye Beach cable station, and his mother before her marriage was Miss Ella Parsons, daughter of the late Warren Parsons of Rye. Mr. Fraser was educated at Phillips Exeter academy, Massachusetts Institute of Technology and Leland Stanford Jr. University. He is survived by his wife, one child, his parents, and one brother, Julius Fraser of California.

Mr. Fraser was located at Alameda, Cal., and was one of the most successful young business men of the city, having established the Fred Fraser Furniture Company. He was vice-president of the Alameda Chamber of Commerce and one of the founders of the Technology club of Southern California.

1906.

C. F. W. WETTERER, *Sec.*, 147 Milk Street, Boston, Mass.
JAMES W. KIDDER, *Asst. Sec.*, 50 Oliver Street, Boston, Mass.

The following letter received by Bryant Nichols of 1907 from A. L. Bell, Course XIII, who has been working on the Panama Canal and is now at Balboa should be of interest:

There have been so many changes in conditions here since I last wrote that I am at a loss to know where I should begin. Perhaps the most interesting thing is the fact that the Canal has been in commercial operation since August 15. There were forty-one steamers put through last month which is doing pretty well for a start, considering the unsettled maritime conditions. For several months the gradual concentration of all forces except those for operating the locks at this end of the line has been going on and I moved over on July 1. For a number of months before that I had been in charge of the design and inspection of erection of the terminal shops, reporting to one of the members of the commission. Work began slacking up so I was transferred to the mechanical division who are operating the plant. Am mechanical engineer of the division but in addition am used in a consulting capacity in my old work. This is really my first experience on an operating job and I am finding it very interesting. We really have a whale of a big plant and can turn out most any class of work. Just at present work is pretty slack on account of work on the canal getting cleaned up. Of course we hope to get a lot of commercial work later on but we will have to build up a trade.

An article from the Houston (Texas) *Chronicle* of November 13, 1914, gives an account of a two days' convention of the Texas members of the American Society of Civil Engineers which was held in Houston. Terrell Bartlett, of Course I, who has his headquarters in San Antonio was present and read a paper on bridge construction for county roads. Bartlett is consulting engineer of Bexar County, Texas, of which San Antonio is the county seat.—Harold V. Coes, of Course II, has recently entered a new field of activity at New Haven, Connecticut, and the following letter from him will be of interest:

This is simply to confirm my statement to you over the 'phone recently, for the class records, that I have resigned from Lockwood, Greene & Company as special principal assistant, and have gone into partnership with some gentlemen here in New Haven, as the active head of a new business. I am a director, and vice-president, and general manager of the Sentinel Manufacturing Company, until recently known as the Sentinel Automatic Gas Appliance Company and we are about to bring out a complete line of patented automatic gas stoves and fireless cookers combined, automatic laundry iron heaters, soldering iron heaters, timers and gas blow torches. Tell any of the boys who are passing through to stop and pull the latchstring. They'll find me in the 'phone book and I'll be glad to see any of them.

Fred H. Bentley, Course II, advises that he is now with Jacobs and Davies, Inc., tunnel engineers, New York City. Bentley says that he frequently meets some of the '06 men at the Tech

Club and mentions Howard, Blackwell, McClintock and also Keleher, who is back from South America.

At a dinner given on December 7 in honor of Professor Richards, who is completing fifty years of service to the Institute, the following 1906 men were present—Norton, Buff, Barber and Hutchins. Norton, in connection with Professor A. G. Woodman has just published a book, "Air, Water and Food from a Sanitary Standpoint."

Address Changes

Charles E. Abbott, care of E. A. Abbott, 141 Milk St., Boston, Mass.—Wm. G. Abbott, Jr. Wilton, N. H.—Fred H. Bentley, 885 E. 181st St., New York, N. Y.—Edmund S. Campbell, Art Institute, Chicago, Ill.—Ralph S. Clarke, 35 Rockwell St., Dorchester Center, Mass.—Harold V. Coes, Sentinel Manufacturing Company, New Haven, Conn.—Richard B. Dole, U. S. Geological Survey, Washington, D. C.—Henry D. Eaton, Stockbridge, Mass. —Wm. C. Furer, care of Department of Public Works, Honolulu, Hawaii.—Perley K. Griffin, 186 No. Beacon St., Watertown, Mass. —Mrs. Wm. G. Hammarstrom, 48 Oakwood Ave., Arlington, N. J. (formerly Anna M. Cederholm).—Marden W. Hayward, 263 So. Clarkson St., Denver, Col.—Wm. J. Lumbert, 126 Auburn St., Medford, Mass.—Clifford Lynde, 359 St. John's Place, Brooklyn, N. Y.—Herbert D. McKibben, 2125 Shattuck Ave., Berkeley, Cal.—Dr. Jas. H. Means, 196 Beacon St., Boston, Mass.—Carroll E. Miller, Jr., 320 So. Mitchell St., Cadillac, Mich.—Roland E. Page, Assoc. Fact. Mutual Insurance Companys, 31 Milk St., Boston, Mass.—Guy H. Ruggles, Miami, Ariz.—H. L. Williams, Empire Zinc Company of Colorado, Kearns Bldg., Salt Lake City, Utah.

1907.

BRYANT NICHOLS, *Sec.*, 10 Grand View Road, Chelsea, Mass.
HAROLD S. WONSON, *Asst. Sec.*, Waban, Mass.

The secretaries wish to emphasize to '07 men the convention of the Technology Clubs Associated which will occur in Pittsburgh, February 19–20. We hope that all the men of the class near that city, at least, will attend and make their presence felt.

The present address for James P. Alvey, Jr., is 818 The Rookery, Chicago.—C. C. Barker, 6 Boardman St., Salem, Mass.—F. E. Banfield, Jr., 84 Hancock Ave., Newton Center, Mass.—Cecil F. Baker, 829 Michigan Boulevard Bldg., Chicago.—Frederick Bachmann, 430 William St., East Orange, N. J.—Howard R. Chase, 6 Aurora St., Edgewood, R. I.—S. J. (otherwise known as "Bill") Egan writes in part as follows:

I am still sticking to naval architecture. . . . At home we are very happy with our fine boy, Joseph Thomas, born last June 26. . . .

Egan is living at 804 Chambers Ave., Gloucester, N. J.—One of the most popular of our classmates, John Frank, was married on October 20 to Miss Blanche Louise Bettman of Chicago.—Roger D. Gale, Wakefield, Mass.—One of our classmate professors, Hudson Hastings, writes from Riverbank Court, Cambridge, Mass.—"I am enjoying a sabbatical year from Reed College by getting back to my student days once more and am taking some courses at the Harvard Business School."—Arthur Jealous is now assistant works manager with the Clark Thread Company at Newark, N. J. He has been there since the middle of August. This concern is part of the J. and P. Coats Company, which has three other plants in this country and others scattered in various parts of the world.—P. F. Kennedy, E. 509 Missouri Ave., Spokane, Wash.—Hugh Pastoriza, 83 Newbury St., Boston, Mass.—E. M. Richardson, 45 William St., New York City.—Arthur T. Remick, 8 Van Buren Hall, Trinity Court, Boston.—Merton Sage was married on December 8 to Miss Mary Elizabeth Rogers in Walla Walla, Washington. They will be at home after February 1 at 206 Elmer Ave., Schenectady, N. Y.—Our assistant secretary, Wonson, became a father on November 6, when Marcia Wonson arrived in his home. He is assistant to the general superintendent of W. H. McElwain Company shoe manufacturers. As noted at the head of these notes, he is living in Waban, Mass., where he has built a house.

1908.

RUDOLPH B. WEILER, *Sec.*, Care The Sharples Separator Co., West Chester, Pa.
CHARLES W. WHITMORE, *Asst. Sec.*, Care of Lockwood, Greene & Co., 60 Federal Street, Boston, Mass.

I. *On the Part of the Secretaries*

The married men walked away with the bowling match as usual on the night of the bi-monthly dinner Tuesday, November 10, 1914. Those living around Boston, who do not take in the dinners, miss much more than they realize. It is enough to state that those that have been, always come again whenever they possibly can. The following were present:—Carter, Luther, Heath, Howland, Lyons, Boylston, Batchelder, Wells, Toppan, Barrett, Mayo, Beede, Ford, L. T. Collins and Whitmore.

George C. Lees is secretary of the Technology Club of Philadelphia.—Your secretary had the pleasure of entertaining E. R. Smith at Thanksgiving dinner. Smith is temporarily located in Philadelphia.

Rand Memorial

The committee on Rand Memorial has sent out solicitations for contributions for this purpose to all of the members of classes from 1904 to 1913. As all of us knew Mr. Rand all will no doubt

want to contribute something, so don't mislay the subscription card which was sent you but fill it in and mail it at once. If you have lost it you will receive a mark of D which will be removed upon receipt of a contribution addressed to Herbert Fryer, Treasurer, Rand Memorial Fund Committee, 35 Federal Street, Boston. H. B. Luther is the '08 member of committee.

Letter from Gregory M. Dexter, Box 164, Wheeling, W. Va., under date of October 10, 1914:—

Kindly arrange to carry me on the records of the class at the address below as I have left the Oregon Short Line Railroad Engineering Department to join the United States engineers at this point. My mother and sister have joined me here and we have taken a very pleasant apartment "Out the Pike" as they say here. It is a very enjoyable condition for me to have a home which I can say is my own in a truer sense than I could speak of a room in a boarding house for the last ten years. Certainly, I believe that my stomach will benefit by the fact that I have mother and sister with me here if nothing else does. As a matter of fact though, I am very well pleased with the new position which I have held since the first of August, and consider that I made a very good move in leaving the Short Line.

As you have already guessed probably from what has gone before, I have no intention of giving up the pleasures of being a "free" man for some time to come and my resolve in that direction has been strengthened by mother and sister joining me at this point.

Addresses are wanted for the following:—

E. B. Lyons, Ting Yu Lo, F. J. Murray, S. F. Nelson, T. W. Orr, W. H. Webb, E. C. Pacheco, Robert Pike, L. R. Rapelli, E. M. Savage, Ugo Sissa, R. de Luna Sotomayor.

New Addresses

W. A. Adams, care of China Realty Company, 39 Nanking Road, Shanghai, China.—Y. S. Bonillas, Bisbee, Ariz.—C. H. Boylston, 106 Central Ave., Milton, Mass.—H. L. Carter, 281 Tappan St., Brookline, Mass.—John S. Coye, Station A, Engineering Experiment Station, Ames, Ia.—W. D. Ford, 15 Linnaean St., Cambridge, Mass.—George T. Glover, 230 Columbus St., Elyria, O.—R. B. Todd, 73 S. Oxford St., Brooklyn, N. Y.—L. S. Weeks, 49 Warwick Rd., Melrose Highlands, Mass.

1909.

CARL W. GRAM, *Sec.*, with Walter Baker & Co., Ltd., Milton, Mass.

Only one reply was received from new arrivals in the Boston district since the last issue of the REVIEW. Arthur Morrill wrote in part as follows:

(For the benefit of those who did not read a previous letter written by Morrill when in Chicago, the secretary will explain that Morrill has not turned "heathen" but has simply fallen into the habit of using abbreviated spelling.)

The November REVIEW reminds me that I am one of those "who have recently returned to this vicinity" and want to be notified when that get-together happens. This summer I finished my three year contract, teaching at the Pei Yang University,

Tientsin, China, and saild for home. Life in China is very pleasant and I enjoyed my stay very much; still America has points and I am glad to be here again. I am a sort of Sinofile, if there is such a word, so I warn you that my testimony may be warpt. Some Americans who go there can't stand China and the Chinese, and come home disgusted, followed by the imprecations of the natives. But there are others who enjoy studying the people, their language, life, and customs, and their peculiar point of view. Our old university porter expounded to me, with numerous gestures, that altho Americans and Chinese had different manners and customs, their hearts were just the same. His discovery seemd to come as a surprise to him. Perhaps he had originally thot, as some Americans do, that all foreigners were as unaccountable as hens with their heds cut off.

It is hard to realize to how great an extent difficulties of language are at the base of all difficulties between races. Any American would feel more cordial toward any Chinese if he thot he could see a joke. And it takes a much finer command of English to understand jokes than it does to read Getty's book and such light literature. But if you jolly a Chinese in Chinese,—even very bad Chinese,—he grins and comes back in a way which you had previously thot peculiar to "God's Country."

But in spite of the interest of the Orient, it must be admitted that there is a great derth of relatives, fair maids, grand opera, and musical comedy in China. So I am glad to be back. The 11th of July I left Tientsin, and after a week ashore in Japan, I left Yokohama July 23. For eighteen days, while the war was beginning, we had to live on wireless and a file of newspapers we took on in Honolulu. After a couple of weeks in California, I sailed from San Francisco, through the Panama Canal, and on to Philadelphia. September 17, I reached Boston and home. These three months I have been busy seeing relatives and friends and giving lamplight lectures on a few truck loads of Chinese curios. It is fun for a change, altho it butters no parsnips. My address for a while is 56 Fountain street, Haverhill, Mass.

The secretary has the following extracts from a letter written by Rebecca Thompson from Kilauea Volcano House, Hawaii:

One does not look on such sights without having his mind range pretty much over everything he ever knew, even to his much-loved Tech, and wondering what they would think of all this. For in the daytime the great floor of the outer bench of rock encompassed about the live crater smokes like a rug that has been beaten, and the stillness from out the place is like the stillness some of which is caught within the walls of the Pennsylvania Station. By night we drove through the woods to the crater edge and there elbowed our way through the sulphur fumes till we stood on the brink of the lake 500 feet below. At first we could see nothing for the dense smoke—only hear—like tumbling water. Coming then to the side where the wind blew the smoke away—we saw with a real gasp—the whole river movement below, through the wind and smoke. On the left was a river of what looked like molten iron, drawn quickly to its destination like water through a syphon; on the right a slow-flowing meadow of permanent chain lightning against black—both moving toward one chasm and striking together with the thunder of heavy surf, and dashing up in spray. On a level with ourselves were the cliffs across the way, rose-colored smoke stealing across their face. And looking down again more to the right we saw open cones radiant and glowing with what the earth evidently holds—light.

Fascinating as it is, one feels it beyond his own powers—something he is not responsible for, and with satisfaction he sees that nature is carrying out her work without intent of frightening man.

From the *Boston Transcript* of November 27, we have the following item:

A romance that began in Islesboro, Me., culminated Thursday evening in Dedham in the marriage of Miss Anna J. Simpson, daughter of Mr. and Mrs. Robert P. Simpson of 52 Barrows street, of that town, to Frederick R. Faulkner of Vancouver, B. C. The ceremony was performed at St. Mary's rectory by the pastor, Rev.

John H. Fleming. The bride was attended by her sister, Miss Mary M. Simpson, and the best man was Frederick Coulon of St. John, N. B. A reception followed the ceremony. Mr. and Mrs. Faulkner will make their home in Vancouver, B. C. The bridegroom, who is a graduate of Acadia College, Wolfville, N. S., class 1900, and Massachusetts Institute of Technology, class of 1909, is a civil engineer by profession and is the resident engineer of the Canadian Pacific Railway Company at Vancouver. The bride is a graduate of the New England Conservatory of Music, class of 1908, and is prominent in musical circles.

M. J. Daly recently became a happy father at Bingham, Utah. —Tommie (T. G.) Chapman was this year advanced to the rank of assistant professor in the mining department of the Michigan College of Mines, at Houghton, Michigan.—Better late than not at all, and so, after nearly four years' silence, the secretary was glad indeed to receive, and to pass along a letter from Jim Critchett:

This may sound to you like a word from beyond the grave, but it is a very lively "dead one" who is inditing this. There is a whole lot of ground to cover in telling you of the events since the last letter (?) so it will necessarily have to be abstracted somewhat. I first tempted fortune with the Illinois Steel Company in Chicago in the electric furnace department and while there held every position from the most lowly to assistant superintendent in charge. That was three years of labor harder than anything I had known to exist, but it left me in better physical condition than ever before. The next opportunity offered the fickle dame was in the small country town of Buchanan, Mich., where I put up two electric steel furnaces for a foundry, and got them operating. This event occupied another year.

Niagara Falls was the next stopping place and it looks to be permanent. I am with the Electro Metallurgical Company, which manufactures ferro-alloys, doing general metallurgical work.

While the above-mentioned dame has not seen fit to reward my efforts with the generous hand dreamed of on Rogers steps, she has been quite kind and even bountiful as judged by the experience gained since the memorable day in June, five years ago.

In the various movements around and trips to various places, I have met a good many Tech men and enjoyed the chats very much. Especially do I remember a luncheon with Al Moses two years ago in Chicago, partly because I have not been fortunate enough to meet very many of the old classmates. Dick Reid, with whom I did my lab. work back at the 'Stute, is with the Union Carbide Company, which is associated with my own company, but as he is located at the "SOO" plant, I do not see him very often. My address in the Falls has been changed to 19 Sugar street. If any of the fellows get to Niagara Falls, and most every one does at some time, we will feel deeply hurt if we are not called upon to do the honors of the occasion. Our hospitality is on tap twenty-four hours a day for any Tech man, and especially if he hail from 1909.

From the Boston *Herald* of December 14 we take the following:

Dr. and Mrs. John Davis Kales of Chicago have announced the engagement of their daughter, Miss Marguerite Mellen, a debutante of last year, to Bradley Dewey of Pittsburgh. Miss Mellen's father was the late William S. Mellen, at one time general manager of the Northern Pacific railroad. Miss Mellen is a graduate of Bryn Mawr, 1913. Mr. Dewey, who was of the class of 1908 Harvard and 1909 Technology, is the son of Prof. and Mrs. Davis R. Dewey of Cambridge, and is now in business in Pittsburgh.

Make a note on your calendar that the convention of the Technology Clubs Associated takes place February 19–20, in Pittsburgh. The local men in charge are handling the event in true Pittsburgh style, so plan to be present if possible, particularly as with Mollie Scharff on the job '09 men should feel right at home.

Address Changes

Richard S. Ayres, 10 Wellman St., Brookline, Mass.—Merton Belcher, Humboldt Nat'l Bank, Eureka, Cal.—Homer C. Bender, 347 Ralston St., Reno, Nevada.—R. E. Blankenbuehler, Elisabeth, Pa.—Kenneth T. Blood, Fort Preble, Portland, Me.—Bion A. Bowman, 36 Lorraine St., West Roxbury, Mass.—Walworth K. Bradbury, Union Lt. & Pr. Co., Franklin, Mass.—Felix A. Burton, 219 E. 17th St., Brooklyn, N. Y.—Wm. J. Camp, Gaulbert Apt. Weissinger, Louisville, Ky.—Capt. C. C. Carter, Fortress Monroe, Va.—Joseph C. Dort, U. S. Geological Survey, Lihue, T. H.—Alan F. Edge, P. O. Box 381, Massena, N. Y.—Benjamin Hammond, 550 Phoenix Bldg., Butte, Mont.—Eugene A. Hunt, 320 Lissner Bldg., Los Angeles, Cal.—Franklin L. Hunt, 19 Howard St., Allston, Mass.—Wm. H. Jones, 50 Peterborough St., Boston, Mass.—Arthur C. Judd, 410–416 E. 32d St., New York, N. Y.—Frederick J. King, Linde Air Products Co., E. Chicago, Ill.—Robert C. Latimer, Ambursen Hyd. Const. Co., 61 Broadway, New York, N. Y.—Henrietta W. Locke, Winthrop Rd., Lexington, Mass.—Ramon F. Munoz, 6A Hidalgo 6, Saltillo, Mexico.—Haylett O'Neill, 6326 21st Ave., Brooklyn, N. Y.—Francis H. Soderstrom, Penos, Zacatecas, Mexico.—Aubrey H. Straus, 2240 Park Ave., Richmond, Va.—Geo. E. Washburn, 36 Forest St., Lexington, Mass.

1910.

CHARLES E. GREEN, *Sec.*, 83 Newbury Street, Boston, Mass.

The following announcements of marriages have come to the writer's attention:—Miss Margaret Hatfield to Mr. Stuart Chase on Sunday, July 5, at Center Harbor, N. H.—Miss Frances Evelyn Close to Mr. John Edwin Barnard, July 16, at Cambridge, Mass.—Miss Frances Sheldon to Mr. Herbert Squires Cleverdon, on June 25, at Rupert, Vt.—Miss Gertrude Alcliffe Mevis to Stewart L. Henderson, September 15, at Fitchburg, Mass.—Mrs. Mabel Rogers Tabor to Mr. Frederick R. Lufkin, September 5, at Boston, Mass.—Miss Elizabeth Braley to Mr. Frederick A. Dewey, November 24, at Concord, Mass.

Gegenheimer sends in some interesting notes from the Course V bunch:—Waters writes enthusiastically about his work in Costa Rica where he is studying diseases of bananas on the plantations of the United Fruit Company. He reports there is yet hope that the company's ships will sail under the Star Spangled "Banana."—Davis still brews booze:

Been very busy keeping the thirsty Course V sewing circle and others wet down.

—Higbee remains as last reported and adds the statement as to the Shermanic effect of war on business.—Trevithick from down in Mississippi writes:

Things are still quiet and hot here. Will start running again in a month, provided the war is not too great an obstacle.

—Lordy dissertates thus—

I certainly welcome your occasional dissertations in theoret, and my replies to them are about the only qualifications for being a good alumnus, I am afraid. The war has us sort of on the defensive just now, and things are a little tight, and thusly my annual European summer tour has to be postponed. By the resignation of our superintendent I have automatically become acting superintendent now and trust before your next theorem is propounded I shall have more material and satisfactory evidences of the job.

—We understand Gegenheimer himself stepped into the matrimonial puddle last June. Why not send us some details "Geg"?—Don Williamson writes from Detroit under the heading of the Edison Illuminating Company of Detroit:

I very seldom see any of the fellows of 1910 out here. Karl Stellwagen, who, as you remember, was the only man in our class to take Course IX, was married this summer. He is the only man in our class that I know of in this town, although I have met several other Tech men and am trying hard to build up some enthusiasm in the Technology association here.

(Cleveland Please Notice.)

We stirred up enough spirit to go to Put-In-Bay and trim the Cleveland bunch at a Field Day anyway and I think we will be able to find some more of the same spirit. As for myself, I am busily engaged in construction work with The Edison Illuminating Company of Detroit. They call me "progress engineer,"—my job seems to be receiving all the kicks that come up when anything goes wrong. Or, in other words, I am held responsible for the general progress of the work, both as regards to design and execution in the field. By far the largest job we are working at now, is a new power plant at Connors Creek, which is on the Detroit River just across from the head of Belle Isle. Some figures in reference to this plant might be interesting—9,141 piles were driven for the foundations and 23,000 yards of concrete have been poured for the third of the plant we are now building. The boilers are among the largest in the world. They are of the Sterling type, fired from both ends, with Taylor stokers and have a rated capacity of 2,365 horse power each, but it is expected that in a normal operation they will carry a steady load of 10,000 K. W. if necessary. Some idea of the size of these boilers may be obtained when I state that a week ago last Saturday the company gave a Construction Camp Thanksgiving dinner inside of the first boiler, and forty-six people sat down to the dinner, there being plenty of room to spare. There is one steel stack for each two boilers and these stacks rise 350 feet above the level of the river. The turbines are of the horizontal Curtis General Electric Company type and have a rated capacity of 20,000 K. W. at 80 per cent. P. F. We have been working like Trojans on this plant all summer and are now nearly in position to start firing the boilers.

—Ralph Smeed writes from Albany, N. Y.:

I have been since April resident engineer in this city for Ford, Buck & Sheldon, Inc., of Hartford, Conn., the same firm I have been with for two years, who are consulting engineers for the reinforced concrete mercantile building here which we hope to have done in the early spring. I have run across Barber and also Parsons, 1910, who I believe are both in engineering work in Albany. Besides these, Tech men have not crossed my path much lately.

—Allan Gould writes from the Peerless Motor Car Company, of Cleveland, Ohio:

Am still out here at the Peerless and have been very busy lately. We have been getting in on the truck business for foreign governments and it looks as though there would be no let-up here on the heavy truck production until the war stops. "It's an ill wind that blows nobody good." I have some mighty good times out here with the Cleveland Tech crowd who are certainly a lively bunch and keep things moving whenever they get together.

Gould encloses several items of interest as follows: Carroll Shaw says:

I have resigned from my position with the engineering department of the National Lamp Works of the General Electric Company at Cleveland, Ohio, to become electrical engineer of the Sheboygan Railway and Electric Light Company of Sheboygan, Wis. Sheboygan is a city of almost 30,000 population for which we do all the lighting, power and railway business, and in addition operate the interurban line twenty-three miles long to Elkhart Lake. In my position I succeed the superintendent of light and power and also have to co-operate with the superintendent of the Power Plant for the consideration of all changes and improvements. I am a long way out of the beaten track but hope that any fellow who happens to be in this neck of the woods will look me up.

—Karl W. Gasche who since graduation has been associated with his father at Dresden, Ohio, in the banking business has recently taken a new position in the development laboratory of the Willard Storage Battery Company, Cleveland, Ohio.—Charles P. Monto reports "everything fine" with him and his work as assistant superintendent of the Mungesser Carbon Company, Cleveland.

1910 was actively represented in the recent august Coronation of the new "Chief Kink" of the Northern Ohio Alumni Association by Tyler Carlisle, Karl Gasche, Allen Gould, C. P. Monto, and Rad Preston, which ceremony was performed November 7, at the Cleveland Athletic Club with all due impressiveness and gusto amid a throng of loyal henchmen.—Lewis Southwick has recently taken a position with the Electro-Chemical Engraving Company located in Brooklyn, N. Y.—"Rad" Preston, writing from Akron, Ohio, says:

John Tuttle who was with us in the experimental department of the Goodyear Tire and Rubber Company, is now with the McWall Auto Tire Company, of Toledo, Ohio. He shows up as cheerful as ever at the club once in a while. I had the pleasure of dining a few weeks ago with Stewart Snedden, who is with an engineering concern in New York. Snedden was building a dock then. Max Sherman I last heard of with the sales department of the Babcock & Wilcox Boiler Company, in Pittsburgh. I am still with the experimental department at the Goodyear Tire and Rubber Company, and am finding plenty to keep me busy. By winning the National Championship Balloon Race this 4th of July I got a place on the American team to defend the Gordon-Bennett cup, but the International race was called off on account of the war. I have made several other interesting trips in the Goodyear which I used in the race, once crossing Lake Erie at night into Canada.

—Cliff Heald writes from St. Paul, Minn.:

News is a stranger to me. . . . This section is remarkable now for continued activity in all kinds of business. Ours (C. W. Adams Lumber Company) is better than ever before and it keeps me humping between this office and our branches in the country. Occasionally I am near enough to a pile of lumber to accumulate a few slivers, but not so often as I would like, for the exercise is an asset if it could be taken regularly.

—Harold Perry writes from W. H. McElwain Company, Manchester, N. H.:

Would say that I have been up here in Manchester with the W. H. McElwain Company for just about a year now. Like a few of my classmates, and also other mining students, I found it rather difficult to earn $2,000 a month in the mining industry and have turned to other industries to eke out a living. My present position enabled me to take on some household help on the first of June, and I am now living the double life instead of that somewhat wayward single life. I have heard from Paul Hopkins, who is somewheres around Ontario, Canada, and the last I heard, he was considering associating with the Standard Oil people in their foreign service. Hargraves, I believe, is in Alaska chasing up some gold proposition. Burt Wohlgemuth is still in the blast furnace work. I heard last April or May of the death of Fred Hurley, which I did not see in the following TECHNOLOGY REVIEW. I may have skipped it. I think if it did not appear in the last issue, some card or memorial should appear in the next issue.

—Chet Wilson writes from Dolphin Jute Mills, Paterson, N. J.:

Everything goes along uneventfully down here and I do not see any 1910 men very many times a year. I celebrated my first wedding anniversary on October last. Ralph Bartlett was married in July to a South Bethlehem girl. Also you probably know that Fred Lufkin, Course VI, was married on September 6. This news is all old but may have escaped your notice. Here's hoping things are better up in Bean Town than they are here.

—Dutch Rietschlin writes:

Have just returned from a six months' trip to Montreal where I was resident engineer for Charles T. Main, on the construction of a brick and concrete factory building which will be used for the manufacture of hand and circular saws. Am now hanging around the office not earning my salt during these hard times. While in Montreal spent a few very pleasant evenings with Jack Babcock and his wife. Jack is in the home office of the Canadian Ambursen Company and Raymond Concrete Pile Company. Likes his work and surroundings, so is getting on very well.

—Johnny Ruckman after disappearing for a couple of years dropped in at school December 7, 1914. He has been working for the Standard Oil Company, in Colombia, S. A., prospecting for oil. He got jungle fever and had to be sent home to recuperate, and when last heard from was heading for Washington, D. C. They say he's getting fat.—Our honorable assistant secretary "Berg" Reynolds is up to his ears in work in the Eastman Kodak Company's experimental department at Kodak Park, Rochester, N. Y., being now a full-fledged chemical engineer.

New Addresses.

F. A. Baker, 74 Clement Ave., W. Roxbury, Mass.—L. E. Briggs, 35 No. Maple St., E. Orange, N. J.—H. S. Cleverdon, Turners Falls, Mass.—F. T. Crossley, 141 Atlantic Ave., Providence, R. I.—R. L. Dodge, Box 561, Palmyra, N. Y.—L. A. Dow, 1705 Tenth Ave., Spokane, Wash.—A. A. Gould, 90 3d St., S. E. and Quincy Ave., Cleveland, Ohio.—S. L. Henderson, 1108 Braddock Ave., Swissvale, Pa.—H. A. Higbie, Hillview, Jamaica, L. I.—R. D. Johnson, 65 So. Raymond Ave., Pasadena, Cal.—R. L. Jones, Sulphur Min. & R. R. Co., Villa Rica, Ga.—C. H. Love-

joy, 607 West 136th St., New York, N. Y.—G. R. Lord, 775 3d St., Beaumont, Texas.—F. R. Lufkin, Lilac Lodge, Watertown, Mass.—G. F. Maglott, 508 West 178th St., New York, N. Y.—C. D. Maynard, 25 Hammond St., Cambridge, Mass.—F. J. Pitcher, 893 Main St., Malden, Mass.—G. B. Reynolds, 120 Chestnut St., Rochester, N. Y.—F. Ronald-Simmons, 23 Rue de la Paix 23, Paris, France.—Carroll H. Shaw, Sheboygan R'y. and Electric Co., Sheboygan, Wis.—R. A. Smead, 199 Hamilton St., Albany, N. Y.—O. S. Smith, 1142 Ingraham St., Los Angeles, Cal.—L. W. Waters, United Fruit Co., Port Limon, Costa Rica.—C. W. Wallower, 236 Bay State Rd., Boston, Mass.—D. V. Williamson, 18 Washington Ave., Detroit.

1911.

ORVILLE B. DENISON, *Sec.*, Hotel Standish, Worcester, Mass.
HERBERT FRYER, *Asst. Sec.*, 1095 Fellsway, Malden, Mass.

Unless all signs fail, it seems evident that the much-heralded business depression, however "psychological" it may be termed by the present administration in Washington, has hit our class journalistically (no such word in the dictionary) judging by the dearth of news sent in of late. What few items of interest have been received by the secretary will be duly recorded, however. Before starting on this line, attention must be called to the coming 1911 class dinner in Boston. Bert Fryer is arranging for a big blowout sometime this month (January) although at the present writing the date has not been selected. Due notice will be given of the affair by individual letters and a big time is expected, provided the fellows turn out in goodly numbers. Since there is to be no big celebration this year, all the enthusiasm may be concentrated in these local dinners. Although it is doubtless a disappointment to many to have the 1915 reunion postponed, yet as it is planned to have the affair in 1916, it will fit in with our future plans excellently, as that year will mark the fifth anniversary of our graduation from the Institute, and a celebration is of course in order at that time.—Thorne L. Wheeler, a classmate, was married on the 10th of November in Chatham, N. Y., to Miss Edna Augusta White of that city. The best of luck to the young couple! That is the only wedding of which the secretary has heard since the last 1911 story was written. By the time this month's issue of the REVIEW is in your hands, another wedding may have taken place. Reason: Met Ken Faunce in the Worcester Union Station for a moment recently, and the following conversation ensued: "Hello, Ken," "Hello, Den." "How are you?" "Fine. How are you?" "Fine." "Say, Dennie, what's your address now?" "Hotel Standish." "Oh, just the same." "Yep. What's the idea, going to be married?" "Yep. So long, Dennie." "So long, Ken." So there you are—in on the latest

bit of gossip.—Carl G. Richmond is the proud father of an eight-pound boy, Nelson Carl Richmond, born October 31. Incidentally Carl was recently reëlected to the school board of Revere, his home town, or rather city, as this year for the first time Revere voted as a city.—Another bit of political news: Fred Daniels, VI, was elected recently to the city council here in Worcester by a handsome majority.—Now back to the baby talk once more. The following from Norman Duffett:

No news except that Miss Virginia Alice Duffett arrived on August 25. She is some little lady. I have the good fortune to be working with six other Tech men ranging from class of '90 to '12. The Union Carbide Company, with which I am fortunate enough to be connected, has not seen fit to send me to New England on business and as a result, I am compelled to postpone the renewal of old acquaintances at Tech until some good fortune drops me in or around Boston.

—George Fuller, I, writes that he has been working on a $120,000 brick job in Batavia since April, the job having been completed late in November. He expects to be in Rochester for the winter. —Bert Fryer recently forwarded me a letter from Don Stevens, which as usual contained some news nuggets for these pages. Listen:

The Technology Club of Northern Ohio here has recently held another very successful and unique meeting when we attended in a body a football game between Case School and Kenyon College and then adjourned to the Athletic Club for an informal supper and humorous coronation of new officials. After this we had a great get-together bowling match. The Tech men in Cleveland mean a great deal to me and they are a thoroughly fine and congenial group of men. Our organization stands head and shoulders over any college organization in the city for activity in civic and business affairs. This is three and one-half years for me at Peerless Motor Car and I have learned a great deal during this period. I find that the practical knowledge of manufacturing which I have gained knocks out a good deal of the theory with which I had previously regarded manufacturing. I have contributed occasionally to the magazines, my last article being "Revenue from the Scrap Pile" in *Factory* for August. I expect to be in Boston during Christmas time.

—Royal M. Barton, VI, is now comfortably settled in his new home at 54 May street, Worcester, Mass., and says that he and Mrs. Barton will be glad to receive any and all friends. In a recent letter to the assistant secretary he states that Bala P. Mathur, a course VI man, is having a great time in his native land, India, electrifying the Nijam of Hyderbad's mint, revamping the telephone system, etc. Mathur states he would like to hear from Francisco Fernandez, if anyone knows where he is.—Had a nice long letter from Ted Parker recently, which he claims to have written partly in self-defense:

You will guess a long time before you hit on the name at the end of this letter. The only excuse I have for writing it is that Fat Merrill—who lives out in the desert to the south of us—has insisted that if I didn't write to you and give an account of myself, he will do the job himself. One hates to be intimidated by a ruffian like Fat, but the difficulty is that one can't always foresee the extent to which his imagination will lead him.

However, there isn't much of a story to tell. I was back as an assistant with Professor Spofford for one year after graduation, and after that worked for about

six months in the office of H. C. Keith, consulting engineer, at 116 Nassau St., New York City. This place I gave up for a job with the Electric Bond & Share Company, who sent me to the Utah Power & Light Company in Salt Lake City, where I have been ever since. My work is in the hydraulic and structural end of the outfit, and keeps me in the office most of the time. The company is a very large concern for this particular part of the world and is operating and building a lot of hydro-electric plants located all over this state and the southern part of Idaho. Things are varied and very interesting. I have had opportunities to see a lot of this western country, and am getting to like it very much.

I was married on May 10, 1913, in Salt Lake City, to Miss Estelle Peabody of Wellesley Hills, Mass. We had a son born to us this fall. Have had very little opportunity to see or correspond with any of the 1911 crowd since coming out here. It is the native heath of Scott Kimball, but he doesn't seem to care about coming home. Anderson passed through going from one hole in the mountains to another, and Emmel came down from Butte to a miners' convention. Fat Merrill is working for the San Pedro Railroad down at Milford. He belongs to the "Safety First" committee—can you imagine Fat striving for safety first?—and comes to Salt Lake once a month for that laudable end, and to let me lie to him about this letter.

—"Don" Frazier has left the employ of the Lynn Gas & Electric Company and is now with the American Mutual Liability Insurance Company, located at 50 State Street, Boston. He writes that George Cowee is with the same company, stating that George is the "same old boy, but has quite a family now." In his travelings about New England he met George Estes, a classmate, in Lewiston, Maine, and the two had a pleasant reunion.—Following the announcement of Ken Faunce's and the dialogue described above, substantiation of the impending affair has just been received by the secretary in the form of an announcement that Mr. Kenneth Winslow Faunce and Miss Grace Tufts will be married in West Roxbury on the evening of January eleventh.—The following clippings from recent Boston newspapers will be of interest, for the "hero" of the stories is an ex-1911 man:

The engagement of Helen Leghorn to A. Washington Pezet, playwright, and son of the Peruvian minister to the United States, has been announced. Miss Leghorn is the daughter of Mr. and Mrs. George Richard Leghorn of 49 Verndale street, Brookline. Her father is connected with one of Boston's hotels. Mr. Pezet since his graduation from college has been engaged in diplomatic work, as well as being a playwright. He has already written and produced several plays that met with success. He was a graduate student at Harvard, and then went to Washington as secretary of the Peruvian embassy. He is now back in Boston.

For the edification and entertainment of Boston's aristocracy, the Goddess of Drama is to be coaxed into doing her prettiest by a 26-year-old Peruvian.

George Washington Pezet is his name. Pronounce it "P-zay," and then go on with the story. If you had attended several functions lately held in Boston you would have heard Mayor Curley introduce to the festive board "the Honorable Federico Alphonso Pezet, minister pleni-potentiary and envoy extraordinary from Peru to the United States of America." George W., the subject of this narrative, is his son. The father is a brilliant, genial, democratic individual. So is the son.

"But why should you want a story about me?" he asked a Sunday *Post* reporter. "It is understood," he was told, "that you are to direct that which is to be artistic in the new Toy Theatre being erected on Dartmouth street."

The reporter had set out in search of George Washington Pezet with a hazy impression of red velvet knee breeches, silver buttons and jangling spurs. Had the scribe found George W. Pezet strumming upon a guitar he would not have been surprised.

But the young director is 99 per cent. American and 1 per cent. Peruvian in his characteristics.

And this 1 per cent. has been mislaid. In fact, he's late of Harvard and Tech, and things like that. His entire training has been received either in this country or in England.

He is the only child of Senor and Senora Pezet. He was born in Lima, Peru, but left there with his parents when he was five months old, when his father was sent as consul-general to London. Later the father was transferred to Paris, and remained there until 1900. During that time young Pezet was taken about Europe to quite an extent. The elder Pezet returned to the United States in 1910, this time as minister. Young Pezet when at Tech became interested in the work of the Brookline "amateurs" and later played his first part, that of the innkeeper in Richard Harding Davis' "Dictator."

"In 1910 I did my bit of professional acting at the Castle Square Theatre," he said. "I took the Frenchman's part in 'Brewster's Millions.'

"In 1911 I went to Washington as an attache in the Peruvian legation. I became interested in a playhouse like the Toy Theatre. It was patronized by Washington people and conducted by Preston Gibson, the playwright.

"My first play was produced there. It was a comedy, 'Remaking the Raleighs.' I then wrote a three-act farce comedy, 'Marrying Money,' in collaboration with Bertram Marburgh. The play was produced last spring in New York. I have written a one-act playlet on a serious subject, 'Eugenics.' Now I am just completing a three-act comedy drama.

"Mrs. Lyman Gale has been the pioneer in this new field," said Pezet. "Since she started the Toy Theatre similar institutions have been formed throughout the country. Hers was the first. Mrs. Gale and I want to do here what Mrs. Horniman has done in Manchester, England, and what Lady Gregory has done in Dublin. We hope that the Toy Theatre will bring to light as many American authors as Lady Gregory and Mrs. Horniman have Irish and English authors."

—The following letter has been received by the assistant secretary from Foster Russell, who is in Spokane, Washington:

Am still in the public utility game with the commercial department of the Washington Water Power Company. After happy years steaming in Course II (naturally excepting numerous occasions such as when Hot Wire Smith flunked me in his abbreviated course in electricity) during which period I looked with extreme disfavor on all members of Course VI (electrical and all the apparatus used by them) and have been for the past two years busily engaged in annihilating steam plants and making two kilowatts grow where one grew before. I claim a diversity factor of infinity.

This letter is strictly uncensored, and has been written *verbatim.*

All 1911 men in the vicinity of Pittsburgh are strongly urged to attend the Convention of the Technology Clubs Associated in that city, February 19 and 20.

—After Christmas is over, don't forget the old Alumni Fund, and if you have not subscribed at all, send in your little mite, however small.

Address Changes

George Fuller, 83 Adams St., Rochester, N. Y.—T. B. Parker, 1205 Second Ave., Salt Lake City.—H. L. Robinson, 75 Washington St., Winchester, Mass.—J. A. Aaron, 3 Normandy St., Roxbury, Mass.—W. D. Allen, 35 Princeton St., Bridgeport, Conn.—C. S. Anderson, Clark Electric Power Company, Tooele, Utah.—H. A. Angell, care of Tobey & Mills, 220 Sherlock Bldg., Portland,

Ore.—H. S. Arnold, care of International Nickel Company, 791 Boulevard, Bayonne, N. J.—Chas. S. Ashley, Jr., 608 Pleasant St., New Bedford, Mass.—H. E. Babbitt, 905 West California St., Urbana, Ill.—Charles M. Barber, 374 Lincoln St., Marlboro, Mass.—C. S. Barnes, 47 Raymond St., Everett, Mass.—Donald C. Barton, Washington University, St. Louis, Mo.—E. J. Batty, care of J. & P. Coats, Inc., Pawtucket, R. I.—M. B. Black, 49 Hovey St., Rochester, N. Y.—E. H. Blade, First National Bank Bldg., Belvedere, Cal.—John R. Bowman, 1586 Cambridge St., Cambridge, Mass.—P. K. Brown, 1168 Elm St., Manchester, N. H. —P. L. Caldwell, care of McElwain Shoe Company, Merrimack, N. H.—R. W. Cushing, Engineering Depot, Washington Barracks, Washington, D. C.—H. F. Dolliver, 608 Dixwell Ave., New Haven, Conn.—Carlos P. Echeverria, 143 Hemenway St., Boston, Mass.—Rudolph Emmel, Marysville, Mont.—D. N. Frazier, 684 Western Ave., West Lynn, Mass.—W. F. Herrick, 29 Fern St., Auburndale, Mass.—Harold H. Jenks, 10 Langdon Block, Montpelier, Vt.—W. B. Jones, 179 Kearney Ave., Perth Amboy, N. J.—J. L. McAllen, 170 Eleventh Ave., Seattle, Wash.— S. M. Schmidt, 21 Chambers St., Boston, Mass.—R. S. Thurston, Waialua Agricultural Company, Waialua, Oahu, T. H.—Harry R. Tisdale, 360 Broad St., New London, Conn.—Peter D. White, General Delivery, Calgary, Alta., Canada.—Wm. O. Whitney, 31 South 2nd Ave., Highland Park, New Brunswick, N. J.

1912.

RANDALL CREMER, *Sec.*, care Snare & Triest Company, Cruz Grande, Chile, So. America.

JOHN E. WHITTLESEY, *Asst. Sec.*, 10 Regent Street, W. Newton, Mass.

Here's hoping that hard times are nearly over, as they seem to put a damper on the class spirit. Here it is 1915 and getting pretty close to our third year reunion. The big M. I. T. gathering this year is to be at Pittsburgh, Feb. 19 and 20, 1915, and is going to be some convention, too. They are, of course, saving the Boston reunion till 1916 when the new institution will be completed (thanks to Kebbon). However, we are not going to pass our third year reunion just for that. We have been scattered too long and it is time to get together again.

The 1912 men in Chicago are pulling strong. They had a dinner in November at the Tip Top Inn, and W. W. DeBerard, '01, the western editor of the *Engineering Record*, spoke. They were very lucky in getting "Pa" Allen, who was in town, to speak also. Their next dinner will be held December 16.

The engagement of Miss Caroline R. Clark to Fritz Shepard was announced about a month ago. Fritz is still selling storage batteries.—Phil Redfern's household was visited by the stork and

left Phil the proud father of a little girl.—Arch Eicher was in Boston over Thanksgiving and informs us that he is helping construct a big filtration plant in Cleveland, Ohio.—Gordon Edgerton is now sojourning in New York and is working for Guy Lowell on the plant for the celebrated court house.—"Doc" Wyman is working as assistant superintendent for the Aberthaw Construction Company in some of their work down New Haven way.—Dick Wallis hove in sight on Tremont street a while ago. He had been on some construction work near Schenectady and was taking a look around before leaving for New York.—Here's one man that is not afraid of hard times. Mr. and Mrs. Thomas Goldberg announce the marriage of their daughter Esther to Mr. Mark Adolph Oettinger on Sunday the 29th of November, 1914, at Roxbury, Mass.

Address Changes

Albert C. Albee, Baldry, Gerburgh and Hutchinson, Ltd., St. Catherines, Ont.—Andrew F. Allen, 25 Chestnut St., Campello, Mass.—Jerome A. Appelquest, 59 Gerry Ave., Elmhurst, N. Y. —Vincent W. Allen, 321 Prospect St., Torrington, Conn.—George A. Brown, 496 Hanover St., Suite 1, Manchester, N. H.—Robert B. Brownlee, 1307 Bloomfield St., Hoboken, N. J.—Harold B. Vickers, Balboa, C. Z.—Archibald M. Eicher, 1294 W. 114th St., Cleveland, Ohio.—Calvin P. Eldred, Pratt Institute, Brooklyn, N. Y.—Edmund L. Homan, 14 State St., Marblehead, Mass.— Gerald Branch Howard, Middle Tenn. R. R., Franklin, Tenn.— Edw. M. Mason, 26 Mt. Pleasant St., Winchester, Mass.—Leroy A. Matthews, 102 Cross St., Malden, Mass.—W. Wheatley Mowry, 269 Carrington Ave., Woonsocket, R. I.—Homan I. Pearl, P. O. Box 454, Wakefield, Mich.—Stalker E. Reed, Minas Tecolotes, Santa Barbara, Chihuahua, Mexico.—Richard H. Scanlon, 3501 West Ave., Newport News, Va.

1913.

F. D. Murdock, *Sec.*, University Club, Hartford, Conn.
A. W. Kenney, *Assoc. Sec.*, M. I. T., Boston, Mass.

It seems to be the proper thing in editing class notes to put the matrimonial news first. It may be because that is thought most important, or it may be to get it out of the way. Any way, an exception will be made in this case, for certainly the most important event in the history of the class of 1913 since the last Review is the class dinner, which was held at the Hotel Oxford, December 5. Accordingly, the place of honor at the head of the line will be given to an account of the reunion. By six o'clock the men began to gather in the lobby of the hotel, which at 6.30 presented a very animated appearance. Late-comers were joyously hailed and everybody was busy renewing old acquaintances, making new ones, finding out who was married and who had jobs, and seeing as many other

fellows as possible. It was at this stage of the proceedings that our new bursar was greeted by one of the men, who said he knew Mr. Ford was a '13er as his face was familiar although the name had slipped his memory; and Dr. Dewey was found in a part of the hotel quite near the bar, having as he explained, "come in the wrong way."

At half-past six, the sixty-five men present sat down to dinner after a cheer under the expert leadership of Bill Mattson. Quiet prevailed for a time, while the most serious part of the evening's work was attended to with gusto. "Hap" Peck, as toastmaster, could not be silenced for long, however; but soon rose and uttered the introductory word, "Fellows!—" with all the dignity derived from long practice. The announcement of the first song, "Take me Back to Tech," started the second part of the program, and, led by John Phillips at the piano, everyone joined in the singing. Let it be said in behalf of Peck, however, that during the course of the evening he did tell one really funny story. The written word can't do it justice, but if you meet Peck some time and weren't at the dinner, don't forget to ask him about it.

Mr. Ford was then introduced as a man whose name had been made familiar to us all by an enterprising western manufacturer. Mr. Ford told of his having been early in the Tech atmosphere through rooming with a couple of Tech men. Those were the days when Tech had a great fencing team, and the Union was being started above the shops on Garrison street, successful (partly, at least) on account of the excellent German beer served there. Those also were the days of the Tech-Harvard fray, in which Mr. Ford nearly became a combatant, but found himself more useful in the hospital corps. After cheers had been given for the new bursar, and "Dear Old M. I. T." had been sung, Dr. Dewey was introduced. He referred to G. K. Chesterton's division of men into three classes: those who make things; poets, who are a bother to their families but a blessing to humanity; and professors, who bother themselves and everyone else by trying to explain everything. Professor Dewey was kind enough to place '13ers in the first class, and said he did not know whether Mr. Ford was a poet or not, but, inasmuch as he has the finances of the Institute to manage, he must have considerable imagination. Since this provided representatives of two of the classes, the Doctor felt he should represent the third himself and so explained some of the economic aspects of the great war. In bringing news of the Institute, he told us about some of the aims of the new course in business administration, XV, and its present prospects; but said he could not bring any farm stories this time. The "Stein Song" concluded the formal program. Afterwards the talking became general, the crowd breaking up into small groups to spin yarns, and it was eleven o'clock before the last stragglers left.

In his introductory speech, Peck said that the dinner committee

had hoped to have Mr. Homer Albers as one of the guests that evening. Owing to the recent loss of his wife, however, the latter did not feel that he could join us. The class, therefore, passed a unanimous vote of regret, and directed the secretary to write a note expressing to Mr. Albers the sympathy of the class, to which the following reply was received:

Please accept in behalf of yourself and class, my deep appreciation of your and their sympathy, and for your friendship. I assure you the feelings of personal friendship are reciprocated. There is nothing left that does me so much good as such feelings from my students.

Our matrimonial column has dwindled somewhat since the last issue, but we still have items of interest.—The engagement of Miss Janet B. Higby, Erie, Pa., M. I. T. '14, to Malcolm Lewis, VII, was announced June 17 (but to the secretary only recently).—"Fat" Hoyt, I, has also won the distinction of being mentioned here. Cards announcing the engagement of Miss Dorothy M. Ruggles to Mr. Lawrence B. Hoyt were sent out last November. Congratulations, fellows; the class wishes you the best of luck (although you have it already).—The secretary got a nice letter from Claude Cairns. Even at the risk of violating Cairns' confidence we feel it a duty to communicate the former's sound advice to some of our classmates who are in particular need of it:

Since I have left the Institute I have become a married man, and therefore wear rubbers, carry an umbrella, stay home evenings and smoke a pipe. If on looking into the mirror you see lines on your face get married. It is one of the best facial massages we have, in spite of our humorists and iconoclasts.

(Please note carefully, Hap Peck, Al Ranney, George Richter and others, too numerous to mention here.) Cairns was married Jan. 25, 1913, to Miss Mae Mildred Lewis of Salem, Mass. His letter continues:

On June 1, 1914, a boy was born to us, weighing 7¼ pounds. His name C. Douglas Cairns.

Good for Douglas, he certainly has the proper Tech spirit from the start.

As a literary organization also, the class is still active. It is hoped you read in the November number the account of "Buttsy" Bryant's trip to Panama; and you doubtless got the impression that when Buttsy stepped ashore Colonel Goetha s and staff were there to receive him and show him all the mysteries. Indeed, this seemed only fitting. It is interesting, therefore, to get another version of the story; and the following is a letter from A. M. Jones, second lieutenant, Tenth United States Infantry at Camp E. S. Otis, C. Z., Panama:

I was down at Gatun yesterday, it being an official holiday here (the anniversary of the independence of Panama), and spent the day with F. W. Blackwood and his wife. Incidentally my wife and daughter accompanied me. Now I guess you have our family status. I have been married for two and one-half years; was married

in Chicago, in June, 1912, to Miss Barbara LeVatte, the daughter of the Hon. H. C. LeVatte, consular agent of Cape Breton, Canada. We came down here on our wedding tour and have been here ever since with the exception of a few months' leave. We have a baby girl born August 21, 1913—she runs about and talks quite a little. Having been born down here she is known as "Spiggoty." So you see '13 has a Panamanian class baby born in 1913. Re Blackwood has been down here over a year and was married in Colon last December. We live quite a distance apart but manage to see considerable of one another. There are a number of Tech men here on the Isthmus, Tech is right on the job without any trouble. By the way, while I was on duty as "officer of the day" at Gatun Locks one beautiful day last June I had occasion to arrest one "Buttsy" Bryant. Ha! Ha!—scared him blue. Had a corporal and two privates run him into the guardhouse as a suspicious character, after I had recognized him at a distance. Finally I sauntered into the guardhouse, he didn't recognize me in uniform with a moustache (imitation) so I put the third degree to him, but had to laugh and queer the game; however, I showed him through all the chambers and sort of squared things up. The only time "Buttsy" had seen me in uniform previous to that time, was back in the armory in my messenger boy's rig. My Technology work has helped a great deal, especially in mapping the jungle trails in the interior of Panama.

It is to be hoped that "Buttsy" won't feel hurt at the publication of this "secret history"; but, of course, it had to be done in the interest of the truth. Further confirmatory evidence of the famous trip comes from San Francisco, where Al Gibson has overcome his habitual modesty and told us a bit about himself:

Got your postal about the class dinner and sure would like to be able to show up. Please give my regards to all the fellows. I haven't seen but one Tech man out here in the West and who do you suppose that was? "Buttsy" Bryant, on his way back from Panama. He came over to the factory which is a half hour from the city and then we had dinner together. It seemed good to see him and get all the news. I have a fine job and the company is making lots of money in spite of my running the factory. I get up at 6.30 each morning and am on the job from 8 till 5.30. Box-making is extremely fascinating work. We are now building a new factory in the next lot to this one we are in now, and we expect to get in it the first of the year. That will give us a floor space of 35,000 square feet. I am also superintendent of construction. It's wonderful how easy a job is if you don't know enough about it to let the details worry you.

I hope there will be a crowd out next year; the exposition is a wonder. I take my girl riding on the roller coaster every Sabbath after church. All the concessions are running now and most of the buildings are finished.

Of the men who have left engineering for other pursuits, perhaps Zenas Crocker, IV, has been the most conspicuous. Under the big heading "Quits Engineering to Teach Tango," there appeared in the *Boston American* a series of pictures showing Crocker engaged in that pursuit and an interview in which he tells how to perform some of the latest steps:

It was engineering or dancing, and I chose the latter as more remunerative

he said. Some of us may be glad to get some points.—Prescott V. Kelley, XI, has left Pittsburgh and returned to his home in Haverhill, where he is in business with his father.—Donald Van Deusen, II, writes,

I have forsaken the illustrious ranks of engineers for business, and am now in the pork-packing and wholesale provision and produce business in Hudson, N. Y.

—Charles H. Strange has been carried over a good deal of the world in his pursuit of business, for the Standard Oil Company has sent him to Calcutta, India, where he now is. Evidently Tech men are wanted in the commercial world in spite of the financial depression.—Robert Gans is with the Studebaker Corporation, and is another man without a permanent address:

Detroit, Michigan, is my home of adoption, and you will be glad to know that the Tech club is quite lively. '13 is represented by Ed. Menderson there.

Of course, no business inducement, however great, could ever persuade Course I men to follow any calling except that of engineering, and news from all over the country shows them to be on the job.—H. M. Rand, I, writes from Richmond, Va. He is trying his "Structures" on the C. & O. R. R. in the chief engineer's office and says they don't seem to know the difference.—H. P. Fessenden, I, laments that,

As usual, I'm in the wilds on a survey at the time of the dinner.

Too bad, Fuzzy, we missed you!—Jose M. Cadenas, I, is senior member of the general contracting firm of Cadenas & Cadenas, of Havana, Cuba. Amongst recent accomplishments of this enterprising firm was the completion of a $75,000 water supply project for a town of thirty thousand inhabitants. A large steel building for a refrigeration plant is now being undertaken at Camaguey, Cuba. In both cases the designs were made by J. M. Cadenas. —Clarence W. Brett, I, has become assistant manager of the Boston office of the Dodge Manufacturing Company.—E. E. Murphy is with the Public Service Commission of New York, working on the Steinway tunnel.—Another underground worker for the same organization is Ernest L. Osborne junior engineer on the new subway construction.—Robert G. Daggett, XI, is in the same line of work.—The following item about "Buttsy" Bryant was handed in by one of his friends and is believed to be true in substance.

William A. Bryant is now resident engineer in charge of construction on the Newburyport water works. His tooth is better.

Bryant got acquainted with dentists all over the country on account of that sick tooth, so we are glad to get news of his recovery.—Any of our classmates having labor troubles on their hands need only get in touch with Bill Mattson, who is becoming an authority in that line in connection with his work for the Bay State Railway Company on arbitration.—Robert P. Smith is another railroad man and has charge of a surveying party near Prince George, British Columbia, in the employ of the Grand Trunk Pacific.—A. K. Wardwell, I, combines business and engineering by taking charge of the survey end of a flourishing real estate business in Tom's River, N. J. Prospects are good, and he likes the work.—Norman Lynch may be working too hard, or may have nowhere else to go; for his only remark is,

I sleep on the drawing-table owing to hard times.

He is in Wilkes-Barre, Pa., and we can only hope he doesn't sleep daytimes, as that would be too commonplace.—A. S. Milliken, I, breezed into the dinner in fine style. The Coast Survey claims his services, and he has been working in Portland, Maine. Soon he expects to go South to Key West, and next year may get to the West coast.—Newsome Eichorn, XI, was also at the festivities. He is industrial inspector in the mills of North Adams, Mass.—Among the mechanicals, Custer seems determined to keep in the public eye. From the National Cash Register Company, he sends regrets that he could not attend the dinner and announces that he is the happy father of an eleven-pound engineer. Custer always seems to have some good reason for receiving congratulations.—A. M. Loeb, II, is in Philadelphia studying at the Textile School there.—Benjamin S. Munch, II, has recently connected with the G. E. Prentice Mfg. Company, New Britain, Conn.; but he does not say in what capacity, so it's all right to guess manager.—The following knock comes from S. W. Selfridge, II, of the American LaFrance Fire Engine Company, Elmira, N. Y.:

> I spent a Sunday afternoon with Eddie Hurst in town. It was good to see a civilized (?) human being for a change. We had a great talk. Needless to say, the dinner sounded good to me.

—Fay B. Williams, II, recently elected a member of the A. S. M. E., is engineer with the Lamson Company, Boston.—When it comes to traveling, there's nothing like the course III outfit for covering distance. Walter Whitehead, III, came all the way from Nevada just to attend that class reunion.—Percy Whitman, III, is out in the Colorado coal fields on the operating end. His services were so valued by the company that they sent an escort of soldiers to meet him at the train when he arrived. "It's great to be a hero."—Jerry Fallon attended the spread at the Oxford and contributed most of this news about the miners. He is foreman with the Davenport-Brown Company, contractors on building construction and manufacturers of interior fittings. It's Jerry's job to be with the buildings while they are going up.—Tremere, III, is in Bingham, Utah, on mining work.—Stillman is assistant at the 'Stute.—The electricals make themselves heard occasionally, too. Bill Katzenberger is assistant power engineer with the New York Edison Company.—Miles E. Langley, VI, has become an instructor in civil engineering at Bowdoin College, Brunswick, Me.—R. J. Murphy, VI, has gone back home to Newfoundland, where he is managing-director of the United Towns Electric Power Company, which sounds quite impressive, doesn't it?—Ira W. Knight, VI, and Ward C. Lovell, II, are both with the Underwriters' Laboratories of Boston. In October, Knight was transferred from inspector in the Rhode Island Territory to position of engineer at the Boston office and chief inspector for the New England territory, so things seem coming his way.—Lanning, II and VI, was picked out by Dr. Dewey as the best looking man at the dinner;

and he had to spend most of his time explaining his system of reducing weight. He is quite an Apollo now, and the Manning, Maxwell, Moore Company has the benefit of his services as commercial engineer. He has been studying at the different factories of the company, which manufacture inspirators and steam gauges; and the first of the year he expects to start on the road, acting as trouble-man, solicitor, etc.—Some of our health experts report this month. Mayo Tolman, XI, is resident engineer for the Maryland State Board of Health.—G. E. Harmon has been appointed instructor in hygiene and bacteriology at the Western Reserve University School of Medicine.

Last, but not least in importance or numbers come the chemicals (including chemical engineers and electrochemicals), a worthy, hard-working crowd.—K. B. Blake, XIV, who is at Queen's University, Kingston, Ontario, contributes the following war news:

> Nothing but war and soldiers here. Over 1,500 men in barracks already and more coming in all the time. The war has practically closed our lab. here; that's the sad part of a government job when the nation goes to war.

—"Hez" Holmes, X, sends from Philadelphia his longings "for more of Mully's organic quizzes and his hexamethylene tetramines." We can guess that a few well-chosen mercaptans would hold "Hez" for a long while.—Phil Barnes, X, is drafting just now for the A. B. See Elevator Company in Boston.—Tommy Collins, X, writes a word of greeting from New York and adds,

> I am still running coal and other fuel tests and depositing the proceeds on the "Gay White Way."

Be careful, Thomas!—Robert Schulze, Jr., V, has a commercial position with the William Carter Company, of underwear fame.—Along with his "regrets," Allen W. Spicer, X, remarks that he is keeping his end up with the Northern Ohio Association. Spicer is in Cleveland with the Mechanical Rubber Company.—Phil. Capen, X, is taking Applied Leather Chemistry at Pratt Institute. This is his second year there.—Research with the American Sheet & Tin Plate Company, Pittsburgh, became too prosaic for Wemple, X, and he is now home in Waverly, Ill.—P. B. Terry has engaged in a most useful pursuit. He is assistant second chemist with the Babbitt Soap Company and has everything going fine. No chance for the war to affect Phil, for we must keep clean.

Well, this is all the gossip that has trickled into the secretary's office. The next great event to take place will be the levying of the class dues; so start saving up your money now. It is hoped that every man who has ever paid dues to 1913 will be given a splendid opportunity to renew them; and we are sure he will appreciate it.

Address Changes

Robert A. Allton, 501 W. Macon St., Decatur, Ill.—Ralph T. Alger, Akron Improved Water Works, Akron, Ohio.—V. V. Ballard, care of J. Y. Bayliss, Municipal Bldg., Chattanooga,

Tenn.—P. S. Barnes, R. F. D. No. 1, Portsmouth, N. H.—H. E. Beckman, 946 Redway Ave., Cincinnati, Ohio.—R. C. Bergen, 111 Rector St., Perth Amboy, N. J.—L. A. Bevan, 83 Page Road, Newtonville, Mass.—H. S. Birchard, 49 Pine St., Pittsfield, Mass. —Wm. S. Black, Aurora, Nevada.—C. W. Brett, 8 Plymouth St., Abington, Mass.—Barton E. Brooke, 833 Beacon St., Boston, Mass.—M. F. Burleson, 613 Montgomery St., Jersey City, N. J. —G. N. Burrell, 707 So. 10th St., Tacoma, Washington.—R. B. Catton, 237 Beacon St., Boston, Mass.—J. P. Constable, 8 Cottage Place, Utica, N. Y.—P. L. Flansburg, 114 Milk St., Boston, Mass.—C. L. Gabriel, 445 Strafford Road, Brooklyn, N. Y.— H. I. Green, 914 Main St., Worcester, Mass.—G. E. Harmon, E. 9th & St. Clair Ave., Cleveland, Ohio.—P. D. Horgan, 390 Harvard St., Cambridge, Mass.—Wistar W. Johnson, 266 So. Common St., Lynn, Mass.—P. V. Kelly, 239 Lawrence St., Haverhill, Mass.—G. E. Leavitt, Jr., 160 E. 22d St., Bayonne, N. J.— A. M. Loeb, 1102 22d Ave., Meridian, Miss.—M. Lewis, 93 Bayard St., New Brunswick, N. J.—H. D. MacDonald, America Zinc Company, Mascot, Tenn.—J. C. MacKinnon, 2430 Lehigh Ave., Philadelphia, Pa.—M. W. Merrill, Rancaqua, Chile via Panama, care of Braden Copper Company.—F. J. Morse, 1125 LaSalle St., Chicago, Ill.—B. S. Munch, 71 Grove Hill, New Britain, Conn.— H. L. Nickerson, Mobile Gas Company, Mobile, Ala.—J. Oppenheim, American Glue Company, Springdale, Pa.—H. D. Peck, Lavender St., Millis, Mass.—A. G. Ranney, 808 Gibbs Bldg., San Antonio, Texas.—W. A. Ready, Preston, Cuba, care of Nipe Bay Company.—G. M. Rollason, New Jersey Zinc Company, Palmerton, Pa.—E. Sison, 26 Princeton St., E. Boston, Mass.—G. R. Thayer, care of Gibbs & Hill Penna. Sta., N. Y. City.—R. L. Thomas, Lewisburg, Pa.—A. K. Wardwell, Box 171, Tom's River, N. J.—L. W. Whitehead, Brookings, So. Dakota.—R. H. Woods, Y. M. C. A., Poughkeepsie, N. Y.—Y. L. Wu, 208 Birch St., Boonton, N. J.

1914.

Charles Parker Fiske, *Sec.*, 99 Aspen Avenue, Auburndale, Mass.

Elmer E. Dawson, Jr., *Asst. Sec.*, 28 Washington Avenue, Winthrop, Mass.

Since the time of writing of our last letter, the Alumni Association has sent letters to the entire class requesting the correct address of everyone. The replies to this letter have been very good and it is to be hoped that those few who have not already their correct address in the hands of the secretary will endeavor to send it in the near future. The first two years after graduation are very apt to be spent in several different places, while after that, the positions become more stationary, so that we hope to keep in

touch with everyone during their "migratory" years in order not to lose complete sight of them.

However good was the response to the alumni letter matrimonial news of late has been a negligible quantity. We hate to keep asking for news, but it would help a lot if everyone would send announcements of engagements and weddings to your secretary for sake of record, if nothing else. We hope to hear more from J. P. Burdick, II, who writes from Providence where he is working in the drafting room of the Revere Rubber Company:

> The worst I can say is that last July I joined the benedicts and so far have found my work very pleasant.

In a subsequent letter Burdick states that he was married on July 7 to Miss Hope S. Mason of Wickford, R. I., at Attleboro, Mass.—On Nov. 7, Miss Edith Augusta Munch, daughter of Frederick C. Munch of Arlington, was married to H. R. Storke, II, at the home of the bride's grandparents in Arlington. There were about three hundred guests present, and we understand that the display of gifts was especially noteworthy and elaborate. Congratulations "Pete," and I know now why you wanted those addresses a while ago.—Just at the last moment we learn from "Sousa" Brooks that F. E. Sauer, Jr., is to be congratulated upon the birth of a daughter. It is our impression that this is the first baby to be born after graduation to any of our class. If we are mistaken, we should like to be corrected. To show how incomplete the records are, we did not know that Sauer was married. Won't you all help us, men? If you are married, just send in a note with when, where or to whom, written upon it. Thank you! —The Boston *Advertiser* of December 28, prints under engagements:

> Miss Bertha Chandler, daughter of Mr. and Mrs. Charles W. Chandler of Winthrop, to Alden Crankshaw of Boston and New York.

On December 10, the class held at the Hotel Oxford the first dinner since our memorable one in June, and the seventy-four that were present made up in spirit what was lacking in numbers. Since the arrangements for dinner were made rather hurriedly we thought this a good number, but we hope to near the hundred mark next time, which will be the last part of February or the first of March. A number of last year's graduates who are back for master's degrees, were there. It is quite notable that there are this year at the Institute 294 graduate students, including 30 of our last year's class graduates. The dinner had a bad start for the camera men succeeded in effectually blowing a fuse and for some moments matches afforded our only light. After a very good meal all hands gathered around one end of the table to hear a few informal remarks by some of the men. "Don" Crowell, X, told us a couple of stories and then Ted Wyman, IV, spoke at length of his experiences abroad last year. He spent much

of his time in France and took several trips on a bicycle, which must be a good way to see the country. He told us a great deal that most of us did not know about the typical French lady, and by the time he had finished there were many who envied him his trip, with the possible exception, however, of the incident when he was jailed for a while and finally lost his trunk. Z. Y. Chow, who is taking graduate work in aeronautics, was on deck as he always is at class functions. Chow is chairman of a sub-committee of the Chinese Students in America, who held a conference last summer. The meeting lasted a week and was quite like many American gatherings, except that they outdid us for late hours. Alden Waitt was there to lead the cheers as in the old days, and the dinner broke up with a good old M. I. T. cheer.

There seem to be a number of fellows either working for their fathers or relatives, and they all seem to hold down better jobs than those working with somebody else's father. Here they are: Pablo Beola, I, is with the firm of Beola & Cia, engineers.—C. Burgher, II, is at home stock raising.—A. F. Hill is foreman of the sheet-metal concern, S. Hill & Son, Santa Ana, Cal.—Fred Karns, II, is general manager of S. T. Karns Sons Company. That's going some, Fred, keep the good work up!—M. S. Maxim, II, is assistant manager for his father's firm, which deals in wholesale produce.—A. H. Spaulding, X, is doing chemical research work for the Spaulding Print Paper Company, in Boston.—A. T. Stearns, 2d, is with the A. T. Stearns Lumber Company in Neponset.—H. S. Willis, II, is with the firm of F. B. Willis, confectioners.—We have received word of several men who are either studying or teaching in other schools.—George Beach, II, who is in Chicago on a job with Otto Fick, II, sends the following:

"Otto and I are still together, fifty-fifty, and as thick as wool. We are not very competitive as rivals for *big jobs*, so in that way are failures here. Otherwise we are good enough to draw money semi-monthly for bread and rice. That is the height of good fortune in these terrible and tremulous times. We accept congratulations for that much achievement.

H. H. Ambler, I, is instructing in the Boston Y. M. C. A. evening school.—Bob Lesher, IX, who was connected with our class last year, and who used to be seen at the Y. M. C. A. swimming pool making records, is now pursuing the academic at Columbia University.—S. W. Stanyan, VI, is a student in the College of Mechanics, at the University of California.—S. G. Stewart is at the Johns Hopkins University.—"Eddie" Taylor, XI, is teaching in the Technical High School in Springfield.—F. L. Ahern writes that he is with the Public Service Commissioner in New York City.—F. C. Atwood, XIV, is secretary of his course and sends as follows:

We are trying hard to keep our Course XIV family in close touch with each other.

—Crocker is with the Columbian Plate Glass Company at Blair-

ville, Pa., trying as he says "to be analytical and industrial chemist with an equipment of half a dozen test-tubes and a dish pan." He is to have a well-equipped laboratory in the near future, however. —An echo of your story of the Ford's comes from C. G. Maier. While out riding on his motorcycle, a suffragette tried the effect of her $\frac{1}{2}$ MV^2 on his rear wheel. It was lucky for him that the "M" of the Ford is a negligible quantity, for her "V" was considerable. He is research assistant in the National Carborundum Company at Buffalo.—L. A. Wilson, the "speed-king" is on his way to an M. S.—Horton and I are browsing around the Phys. Lab. hunting for those much abused articles, the stop-watches.

This having a course secretary seems to be a very good stunt, as in this way there is some one writing to the men who knows them intimately. It would be a good thing for all courses, only you Course II men be mighty careful!—H. J. Baker, VI, is with the Edison in Boston.—G. H. Breed, I, is living at home and working for Stebbins & Haxby.—L. N. Brown, X, is with the Maxwell Motor Company in Dayton.—"Sousa" Brooks sends a fine letter from 50 Church street, New York City:

Have just read the November issue of the REVIEW and it reminded me that it wasn't necessary always to chase the long green although I confess I need it as badly as ever.

On the fifteenth of June, I started work for the Providence Engineering Works at the main office in Providence. My job was estimating steam engines and centrifugal pumps and every once in a while to leave town to chase up business. I stayed in Providence until the first of November and then came down here for the consideration of a few more greenbacks to their New York office. My work here is about the same as it was in Providence. I work a twenty-inch "slipstick" quite frequently and as a result my own ten-inch rule feels just like a toothpick. At present I am living at the Harlem Branch of the Y. M. C. A. at 5 W. 125th street, but hope to have a more permanent address before many moons. (Here's hoping.)

This is a gay old town, but believe me! I'd rather be back in good old Beantown for various reasons.

I have met quite a few Tech '14 men since I arrived. Murphy, Dagget, Dunn and Van Etten are keeping bachelor apartments on 124th street right near here. They are from Course I and work on the new Subway construction. Fred Sauer, Course I, is also here on the same job. He and his wife are living at 122 Linden street, Brooklyn, N. Y. About five weeks ago he was presented with an $8\frac{1}{4}$ pound baby girl which I haven't passed judgment on as yet but expect to in a few days as I am planning to pay them a visit. I guess the only thing I'll be able to pass judgment on will be its musical ability (?). I have also met Hines, Course VI, and Calver, Course I. The first mentioned gentleman is taking an apprentice course with the American Telegraph and Telephone Company. The latter is doing some economic research for the city, the exact nature of which I do not know. "Crit" (B. P. Crittenden, II) is down here also but I haven't seen him yet. "Gazy" (H. T. Gazarian, II) is here working for the New York Railways Company doing "applied" and all kinds of such work. He and I were up to see the four bachelors mentioned above about a week ago.

That's all the news I have and hope it will satisfy you for a while at least. Tell "Bill" McPherrin if that shaper he is designing is going to produce shapes like his, it will surely meet with instantaneous success.

Homer Calver, I, has found employment with the New York Association for the improvement of the condition of the poor.

Charity begins at home, Homer, and we could suggest several who would be glad to be improved.—A. W. Carpenter, X, is chemist in charge of the Municipal Filtration Plant at Alliance, Ohio.—W. E. Champion has a temporary position as health officer of Greenville, North Carolina.—L. D. Charm, VI, was one of three men to take a chance on sending in their dollars in advance, which thoughtfulness is appreciated. He is now with the B. F. Sturtevant Company.—J. H. Currier, II, is draughting at the Navy Yard.—C. C. Davis, X, is inspector for the Boston Woven Hose & Rubber Company. It has been suggested that this must be a very pleasant position.—"Skip" Dawson, II, has left the Bemis Bro. Bag Company and is now salesman for the Swift Wool Company for their Chicago house, although he expects to be back in Boston early in the year.—Ralph Howes is in the employ of the Manufacturers' Light and Heat Company, a $23,000,000 corporation engaged in producing and distributing natural gas in Ohio, West Virginia, and Pennsylvania. Howes is at present working on an inventory of all the company's property under the direction of H. M. Byllesby & Company, a Chicago engineering firm.—H. M. Griffith remained in Boston during the summer, completing an extended project in his favorite field—railroad signal engineering. Griffith is preparing to leave for his home on the Pacific coast shortly, where he will pave the way for those Tech K Σ's who plan to visit San Francisco in 1915.—Fred Karns is in the steel erecting business at Franklin, Pa.—"Al" Devine, II, is doing some interesting work for the Fuel Testing Company, in Boston. They have automatic appliances of all sorts for registering the condition of a boiler fire at any time, thus assisting the fireman in his duties.—D. V. Dierks, II, is in the lumber business in Kansas City.—Lester Downing, II, had the misfortune to break his arm a while ago while cranking his car, but although he appeared at the dinner with it in a sling, it did not spoil his meal, for he has already become singularly adept in the art of left-handed self-feeding. He has not worked any since June, but comtemplates some when his arm mends.—"Buck" Dorrance says that he seriously contemplated a trip to Boston for the dinner and continues:

> However, when I suggested this plan to my immediate superior, who by the way, is a Tech graduate, it met with a cold reception. Of our classmates, the following are working with a company that is making an inventory for the Philadelphia Electric: P. M. Currier, H. J. Danforth, J. T. Holmes, E. I. Staples, G. V. Stewart, and A. P. Shepard.—J. E. W. Giffels, II, is doing similar work for the Public Service Company of New Jersey and is living in Camden. I have been looking after the social end more of late. As a result I am having a very good time but never seem to get enough sleep.

—R. C. Foster, IX, has a position with Rideout, Chandler & Joyce, in Boston.—Miss Constance Fuller, IV, is draughting for Ryan & Luscomb in Waltham.—M. J. Glennon, W. P. Houston, I, and E. J. Reardon, are working for the Boston & Albany Railroad in Boston, while E. O. Turner, I, is located at Harvard, Mass.,

with the Boston & Maine Railroad.—Course II is well represented in The Whiting Company by A. N. Henricksen, R. L. Parsell, and R. H. Perry.—M. T. Hsu informs us that he is now home in China.—"Spig" Guething, II, writes in response to a call to dinner:

I am certainly glad to hear that 1914 is still on the job. I should like to be with you but deer season is on, and I have yet to get one. (Or does he mean dear?) I'm off again tomorrow. The season has closed for birds, but the partridges are thinning out nevertheless in my section of the town. I am sorry more of the boys cannot be back to share my pleasure at the Institute next term. You know they advised me last June that one's education is not complete with a short four years' course.

J. G. Kelley, Jr., I, is with the Whitman-Kelley Company, in Portland, where his home is.—O. C. Hall, E. A. Mitchell, H. D. Shaw, VI, G. W. White and D. J. Stump, II, are all with the firm of Sloan, Huddle, Feustal, & Freeman, 14 Kilby street, Boston, who are consulting engineers, at present making an inventory of the property of the Bay State Street Railway Company. All the men are now doing office work, but this summer White was detailed on several Power Stations.—Alexander Morrison, X, came down from Lawrence where he is working in the Washington Mills for the American Woolen Company, to attend the dinner.—"Boggs" Morrison, II, says:

Having just started as assistant to the manager in the Brockton Gas Light Company, I do not care to ask for time off, and the manager is usually on deck till six-thirty!

Rather late hours, "Boggs," but we shall try to have the next dinner on Saturday night so we can all hear that *wonderful* story.—Dale McEnary, IV, is draughting for C. S. Frost in St. Paul and living at home.—Maurice Paris, IV, has followed up his reporting and is now with the *Boston Globe*.—Norman MacLeod, II, is "at Brown & Sharpe taking ten hours a day of a course given at the 'Stute by one Bobby Smith, and finds it hard to get off on a spree."—C. W. Olsen and N. E. Baxter, II, are working thesis together and seem to be very busy.

Art Peaslee, I, who has not been heard from till now, suddenly wakes up and writes as follows:

I should be mighty glad to be on hand at the dinner but I had my day off for this year only last week, so what chance have I got for another? You see, Charlie, I am not working in the city here, though the Water Board of this town is employing me. I am working on the Upang Dam, which is being built for Hartford's new water supply systems out in the backwoods of Connecticut and I'm afraid that if I left the job at this time of year, we'd have a foot of snow and the C. N. E. Railroad would knock off work for the rest of the winter, leaving me to walk fifteen miles back to work on the dam. Seriously, I'm mighty sorry I can't be at the dinner in anything but spirit this time, for it would be like coming up to earth again to be back in Boston with the boys. Collinsville, the place in which the dam I am working on is being built, is much like what the Tech Summer Camp must be in winter. The only thing they have here that reminds me of Boston is an occasional East wind. However, the work has been very interesting, and the experience good. We have nearly finished putting on concrete for the year, having laid nearly seven thousand yards in the last seven weeks, and raised a part of the dam to a height of forty feet

above the foundation. The greatest height will be about one hundred and twenty-five feet, so it isn't quite done yet.

I realize that bankers and engineers are in the habit of working harder than men in almost any other profession, but I'm going to swear off working evenings and write some letters once in a while now.

That last is a very commendable spirit, Art, and I hope it is catching.—"Bob" Patten, II, has decided to quit the city life for a while and try out a position as assistant to mechanical superintendent at the Katahdin Pulp and Paper Company in the backwoods of Maine. His superior is Copeland, 1911.—"Bill" Rogers, VI, will try to sell you a mercer if you look at all prosperous.—C. A. Sandburg, VI, sends best wishes from Los Angeles and says he is having a regular time.—Gale and Paul Shedd are seen frequently around the city. Gale is back to finish his course and seems to have as much time to enjoy life as he always did. Paul is draughting for Gray & Davis.—"Les" Snow, I, spent an enjoyable three months loafing after graduation and has now settled down to work for the American Felt Company in Boston.—S. J. Spitz, X, sends the following communication from Lowell:

After looking over the November issue of the TECHNOLOGY REVIEW, I thought I had better give an account of myself. On September 1 my long vacation ceased when I accepted a position with the Avery Chemical Company here. At present I am superintendent of about half the plant, sharing the honors with C. F. Hobson, 1911. Hobson, who is a Lowell man, is in a position to make my spare time most enjoyable, and he certainly has done so. I see Clisham, X, two or three times a week when I dine with him. I hold him responsible for the poor gas light of Lowell.

(Clisham is chemist for the Lowell Gas Light Company.)—"Peb" Stone, I, is now living at home and is employed by the Remington U. M. C. Co.—Howell Taylor, IV, is manager of the Garden Pottering Company at Adrian, Mich.—J. T. Thornton, X, is in Buffalo, chemical engineer for the Lackawanna Steel Company.—Howard W. Treat is with the Goodyear Rubber Company at Akron, Ohio.—"Gus" True, II, is living at home and working for the Crane Puller Company.—H. Warren, II, is with the United Shoe Company in Beverly.—H. S. Wilkins, XIV, is with the American Storage Battery Company in Cambridge.—Fay Williams, I, is employed by the American Writing Paper Company in Holyoke.—Let's hope that H. R. Worsley didn't get the hoof and mouth disease, for he is working at the St. Joseph Stockyards Company, in Missouri. He writes as follows:

The boys may be interested to know how I am making out. Professor Spofford couldn't get me a job nearer California than this backwater in the banks of the "big Muddy!" So here I have stuck, as busy as a bee, on appraisal work. I am engineer for the Stockyards Company and its two allied terminal railroads, with forty-odd miles of track. My private car still consists of a hand car, with two "hunks" as motive power. I have met two architects, Eckel and Aldrich, former Tech men, and Mowry, XI, '12, is assistant master mechanic at Swift & Company.

—M. J. Sayward, II, sends a very good letter:

The coming of the TECHNOLOGY REVIEW reminded me of my duty to the class secretary. I made a vow last summer that I would not send in anything till I got

a job, but judging from the reports of the other fellows, I need not have felt so badly about it as all that. I am now draughting for the Newport News Shipbuilding & Drydock Company and have been here since November 30. I had a fine trip down via the Merchants' and Miners' Transportation Company about thirty-six hours direct from Boston. On arriving here, I felt as if I had had my calendar put back a month or two. We had a "cold snap" a week ago, it actually got down to 18° above. Some snap! It made me almost homesick to have such good weather. No snow as yet. I miss it, along with the snappy New England climate.

As you may know, this shipyard is about the largest in the country. At present we are employing not much over two thousand men, so I am told, but in the full season we have from five thousand to six thousand. The local papers predict that we will have six thousand by May, 1915. It looks likely, for we have signed contracts for four merchant ships since I have been here. At present we are finishing the battleship, *Pennsylvania*, and are just starting the *Mississippi*. The "yard," as it is always called, is the chief industry of the place, which has thirty thousand population.

My work is mainly drafting in the piping division, but I have been given a little work on some boiler testing. Just now they are testing an oil- and coal-burning boiler of their own design. I have the difficult job of reading an Orsatt. There are more men here from the British Isles than you could shake a stick at. Incidentally there are more coons in town than in the State of Massachusetts.

In the November issue the names of a few 1914 men who have returned to the Institute as assistants appeared, and here are a few more. If there are any besides those mentioned to date, your secretary would be glad to hear from them:—H. A. Affel, VI, in the electrical engineering laboratory.—R. D. Bates, XI; G. W. Blakely, II, assistant to Professor Norton in the heat measurements laboratory.—O. E. Conklin, VIII, C. A. Corney, VI, D. W. Douglas, II, in aeronautics.—R. T. Gookin, V, assistant to food chemist.—A. E. Hanson, VI, and J. A. Judge, VI, in the electrical engineering laboratory.—J. W. Horton, XIV, and F. C. Atwood, XIV, in the physics laboratory.—F. H. Kennedy, IV, F. W. Lane, X, P. B. Owen, III, G. K. Perley, VI, A. L. Fodt, XIII, R. Williams, V, and H. M. Wylde, X.

Don't forget the convention of the Technology Clubs Associated in Pittsburgh, February 19–20. It is sure to be a big time and all 1914 men near Pittsburgh would do well to put themselves out to attend.

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